SERVICE MANUAL

IMPORTANT INFORMATION, KEEP FOR OPERATOR

GROEN®

This manual provides information for:

smartsteam™ BOILERLESS STEAMER 100

MODELS SSB-3E/5E/10EF, (2)SSB-3E/5E/10EF, SSB-3G/5G/10GF, (2)SSB-3G/5G/10GF

- Self Contained
- Electric or Gas Heated
- Capacity: 3, 5 or 10 Steamer Pans Per Cavity
- Pans: 12” x 20” x 2.5”

Information contained in this document is known to be current and accurate at the time of printing/creation. Unified Brands recommends referencing our product line websites, unifiedbrands.net, for the most updated product information and specifications.

PART NUMBER 147423, REV. F (10/07)

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1.1 The Groen Service Concept

Since 1907 Groen has been in the business of designing and manufacturing the finest commercial appliances for the food service industry. Chefs, cooks and kitchen support personnel have come to depend upon the quality of construction and the reliability of operation.

Groen, in turn, depends upon our service centers and their field service personnel to keep the equipment in top operating condition. In order to do this, our designs are made with service and reliability in mind.

Once the Groen equipment is sold, manufactured, delivered and installed, our reputation is clearly in your hands. As part of our team, we value your efforts and input to our product design.

We will do all we can to make your job of keeping the equipment in perfect working order as easy as we can. Together, we will keep our customers satisfied.

1.2 Groen Certified Service

The SmartSteam Boilerless Steamer has been carefully designed to provide many years of efficient and reliable service. Part of the quality program is Groen Certified Service. This includes:

- Groen certifies that all equipment delivered to our customers has been inspected and tested for compliance with the specifications.
- Groen certifies that all parts required for service and maintenance will be readily available.
- Groen certifies that this manual will be updated by means of periodic service bulletins to provide the most up-to-date information for field maintenance and service personnel.

1.3 Warranty and Non-Warranty Repair

Groen Warranty provisions are clearly presented in the customer's Operator Manual.

Certain procedures for the cleaning and/or adjustment of the SmartSteam100 Boilerless Steamer are presented in this manual for reference, but not warranty related.

1.4 Safety

The Groen SmartSteam100 Boilerless Steamer has been designed with safety in mind. This includes safety to the operating and maintenance personnel, safety to the facility in which the equipment is installed and safety to the equipment itself.

The steamer has been designed to the highest industry standards and has been certified by the National Sanitation Foundation Testing Laboratory (NSF), Underwriters Laboratory (UL) and/or CSA (gas).

The steamer contains several devices which are specifically used to prevent unsafe conditions. If they are disconnected during service, make sure they are reinstalled properly and tested before the steamer is operated.

The safety precautions in this manual are in accordance with ANSI 535 Standard. Three different signal words alert you to a hazardous situation: **DANGER, WARNING, AND CAUTION**

DANGER: The signal word **DANGER** indicates that a hazardous situation exists and could result in serious injury or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- When you open the steamer door, be very careful to avoid escaping steam. Steam can cause burns.
- After removing the fan baffle partition, do not put your hands or other object into the cooking cavity until the fan comes to a complete stop. Rotating fan blades can cause severe injury!

WARNING: The signal word **WARNING** tells you that a possibly hazardous situation is present, and if not avoided, could cause serious injury or death.

- Always turn off the steamer power before removing partitions or panels.
- Disconnect the steamer from the power source before performing any service.

CAUTION: The signal word **CAUTION** warns you of a hazardous situation which, if not avoided, may result in minor or moderate injury.

- Steamer may be hot. Take precautions to prevent any contact with hot surfaces.
- Be sure all interior partitions have been installed before operating the steamer.
- All steamer operators and service personnel should be familiar with correct and safe operating procedures.
- Be sure steamer drain is not blocked as this could result in improper steamer operations.

Two other signal words, not directly related to personal safety, are also used in this manual: **NOTICE** and **IMPORTANT.**

NOTICE is used to alert you to hazards that may result in component and/or equipment damage.

IMPORTANT is used to highlight an operating or maintenance tip or suggestion.

1.5 Glossary of Terms

The following abbreviations and terms are used in this manual:

BTU	British Thermal Unit
GPM	Gallons Per Minute
LED	Lighting Emitting Diode
MM	Millimeter
NEC	National Electric Code
N.P.T.	National Pipe Thread
NSF	National Sanitation Foundation
PSI	Pounds per Square Inch (Pressure)
U.L.	Underwriter's Laboratory, Inc.

1.6 Tools and Supplies

This Section identifies the tools, instruments and supplies which will be required and useful in the inspection, repair and testing of the equipment described in this manual.

Most likely, many of these tools and supplies are already in your tool kits and are used in everyday maintenance. Make sure to use only the specified sealants, compounds and dressings recommended by Groen.

CAUTION: Care should be taken in using the correct tool as indicated. Using the wrong tool may inflict damage to the part being removed, installed and/or adjusted. Make sure that the calibrations on instruments are periodically checked for accuracy.

1.6.1 Required Tools

- Screw Drivers: Flat Blade No. 1 and No. 2
- Phillips No. 1 and No. 2
- Socket Wrenches: 1/4" through 7/8"
- Nutdrivers (metric and inches)
- Open Ended Wrenches: 1/4" through 7/8"
- Pipe Wrenches: 6" and 8" size
- Allen Wrenches: 1/16" through 1/4"
- Slip Joint Pliers: ChannelLock or Equivalent
- Wire Crimpers

1.6.2 Recommended Instruments

- Digital Multimeter: Fluke Model 77 or equivalent

1.6.3 Helpful Hardware

- Extension Mirror
- Screw Starter
- Level: 18" Model
- Fuse Puller

1.6.4 Recommended Supplies

- Pipe Thread Compound: Brand: LACO PipeTite Stik
  No. 11176 or equivalent
- Motor Sealant Grease: Bel-Ray
- 2" Aluminum Duct Tape
- Removable Thread Locker:
  Locktite Type 242 (Door)
  Locktite Type 222 (Exterior)
- Clear Silicone Sealant:
  Dow Corning Type 732
- Silicone Heat Sink Compound:
  Non-Fluid Oil Corp., Chemplex 1381
- High Temperature Anti-Seize and Lubricating Compound
  Bostix NEVER SEEZ NSBT-16

1.7 How To Use This Manual

Read this manual completely before attempting any disassembly or repairs.

Please note the similarities and differences between the various models described in the manual.

Before making repairs, you should have knowledge of the steamer operation as described in the Operations Section of this manual and a good understanding of service techniques as presented by the Groen Service School.

This service manual should be taken with you on all service calls. Use the correct tools in accordance with the procedures shown and use only Groen Certified Replacement Parts when performing steamer repairs.

WARNING
ANY POTENTIAL USER OF THE EQUIPMENT MUST BE TRAINED IN SAFE AND CORRECT OPERATING PROCEDURES.

2.1 Controls

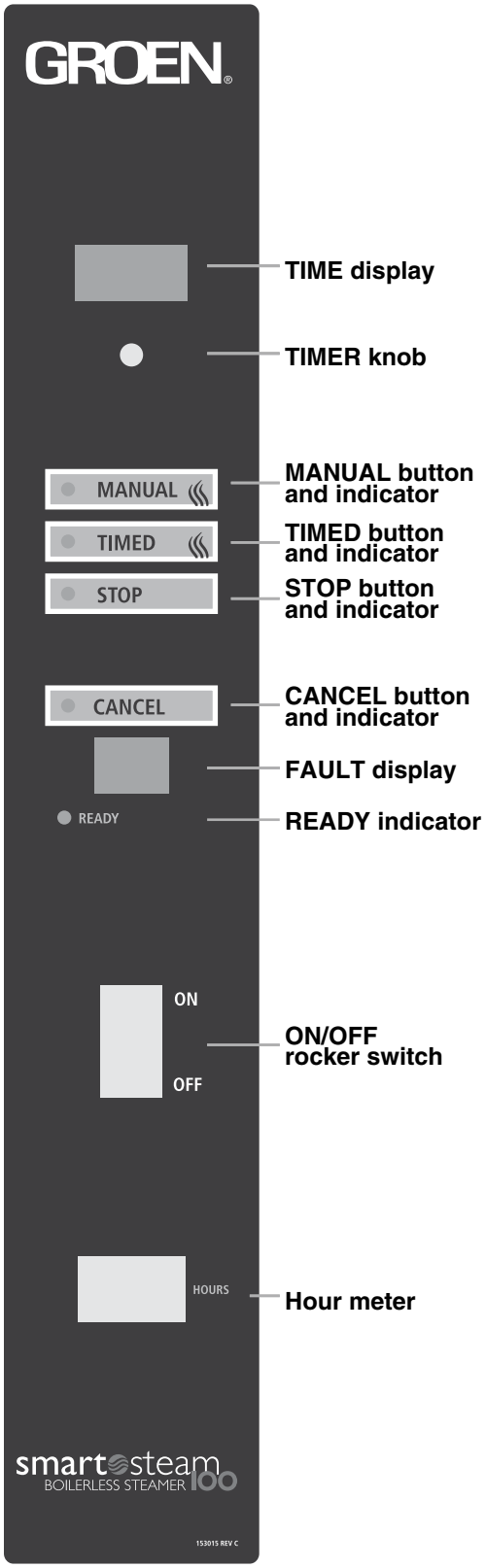
Operator controls are on the front right of the unit.

The SmartSteam100 control panels have the following touch pads and indicator lights:

- The TIME display shows the remaining cooking time. It displays three dashes in MANUAL mode.
- The ON/OFF rocker switch gets the SmartSteam100 ready for use or shuts it off.
- The READY indicator light indicates the unit has achieved the ready temperature.
- Hour meter records cumulative hours of operation.
- The FAULT display shows the current fault.

The push button operations:

1. In the STOP mode the steam generator stays at a low boil or ready temperature.
2. When the TIMED button is pushed, the TIMED light will illuminate and time can be set by turning the TIMER knob. The unit steams until the timer counts down to zero and the temperature drops to ready. At that time the STOP light illuminates and a beeper sounds.
3. When the MANUAL button is pushed, the unit steams continuously. The MANUAL light will stay illuminated.
4. CANCEL button should be pushed to stop beeping.



2.2 Operating Procedure

1. Press the ON/OFF rocker to the ON position, "Fi_" is displayed in the TIME display window. The steam generating reservoir will begin filling, displaying "Fi=" and "Fi≡" as it fills. After initial fill, the unit will begin draining, displaying "Fi=", refill displaying "Fi≡", and begin heating until the READY light comes on (about 15-20 minutes).

2. Load food into pans in uniform layers. Pans should be filled to about the same levels, and should not be mounded.

3. Open the door and slide the pans onto the supports. If you will only be steaming one pan, put it in the middle position. Some foods will cause foam. When cooking foods that foam, such as shrimp, put an empty solid 2 ½ " deep pan in the bottom slot of the pan racks.

4. Close the door. When the READY indicator is lit, take one of the following steps:

   ! If you want to steam the food for a certain length of time, push the TIMED button and set the desired time with the TIMER knob. The timer will automatically run the steamer for the set time and then go into STOP. A beeper will sound. Then push CANCEL to stop beeping.

   ! If you want to steam continuously, push MANUAL button. The unit will continue steaming until stopped.

   ! Push STOP to stop producing steam.

WARNING
WHEN YOU OPEN THE DOOR, STAY AWAY FROM THE STEAM COMING OUT OF THE UNIT. THE STEAM CAN CAUSE BURNS.

5. To remove pans from cavity, open the door. Remove the pans from the steamer, using hot pads or oven mitts to protect your hands from the hot pans.

6. To shut off the unit, press the ON/OFF rocker switch to OFF, "FL≡" will appear in the TIMER display. The steam generating reservoir will begin draining, displaying "FL=" and "FL≡" as it drains and refills to the Hi float twice and finally drains completely and turns off the display.

NOTE: If a large amount of shrimp is cooked in the SmartSteam100, foaming will occur because the steam lid actually gets so hot that the shrimp will cook on its surface and the shrimp proteins in the dripping will foam on the surface of the steam lid. * To avoid this, use a catch pan to catch shrimp drippings and proteins to prevent foaming when cooking a large amount of shrimp.

NOTE: When filling or draining the steam generating reservoir, "≡" will be displayed indicating the water level inside the reservoir, "_" when the cavity is empty, "=" when the low float is satisfied, and "≡" when the hi float is satisfied.

Hi Float

Low Float

Empty

2.3 Typical Operations

The following is a sequence of events typical to SmartSteam100 Boilerless Steamers.

1. Cooking Food

To use the steamer, the cavity door is closed, the ON/OFF rocker switch is set to ON. The unit verifies the floats and drain using the following sequence. The drain valve is closed and the water enters the steam reservoir to the "fill" point. When the water level reaches the HIGH level float, the water fill valve closes and the drain valve opens until water drops off the HIGH float. At this point, the drain valve closes and the water valve opens to refill the HIGH float and the heater will operate. When the water reaches the HIGH float, the water fill valve closes – stopping the entry of water into the steam reservoir.

A relay (electric) or gas valve (gas) energizes and provides power to the heating circuit for the steam reservoir. This heats the steam reservoir to boil the water – creating the required steam. When the cavity is heated to about 180F, the READY indicator light comes on – indicating that the cooking can start. When it is desired to cook food in the cavity, the pans are inserted into the cavity and the door is closed.

Heat-up time is about 20 minutes after the ON switch is pressed, if all of the above conditions are met.

When the MANUAL button is pushed, its light turns on, the display shows three dashed, and the heater turns on continuously. This produces full steam.

When the TIMER button is pushed its light turns on, the display shows time in hours and minutes, the heater turns on producing full steam, and the timer counts down to zero. At any time while in timed mode, the timer knob can be turned to increase or decrease the remaining time.

When the door is open the display shows DOR, the timer stops counting down, and the heater stops heating. Close the door to resume timing and heating.

When the timer counts down to zero the display shows three dashes, the beeper sounds, and the heater cycles on and off slowly to keep the water temperature just above the ready temperature. Push the CANCEL button to stop the beeper.

The STOP button may be pushed at any time to stop the MANUAL or TIMED modes.

If the door is opened during the cooking process, the door interlock switch causes power to be removed from the convection motor. The relay or gas valve opens the circuit to the source of heat, instantly reducing the heat from the steam reservoir.

2. Water Entry Into Steam Reservoir

On power up, the boiler goes through a fill/drain diagnostic to verify the condition of the water level float and drain. If either float is not responding, a service error is generated.

CAUTION: A scaled reservoir or debris will cause service errors. When a float has excessive scale it will not function properly.

NOTICE: When powered off, the controls empty the steam reservoir.

The HIGH WATER float determines if there is a full and proper level of water in the steam reservoir. If the water level goes down, the float is opened by the water level getting low. This causes the water fill valve for that steam reservoir to turn on to permit water to enter the steam reservoir.

Water will continue to enter the steam reservoir until the level of water is high enough to close the HIGH WATER float. This determines that the steam reservoir is full and then the water supply solenoid valve is turned off stopping the water flow to the steam reservoir.

When the HIGH WATER float is open, there is a 3 to 5 second delay before the water fill valve opens. This is to take into account the rising and lowering of the water level due to the bubbling action of the boiling water in the steam reservoir. If the float is open for more than approximately 5 seconds, then the water fill valve is activated.

3. Service Errors

Service errors are normally caused by floats or timing issues (fill time and drain time).

A service error is generated when the electronic controls are blind to the status of the steam reservoir (i.e., floats are not working) or by a blocked drain. The service error may stop the machine from running and the service error number will be displayed in red on the front panel. Service error protects the steam reservoir from irreparable damage.

4. Heater Control

After the reservoir is initially filled and the diagnostic is complete, the relay (electric) or gas valve (gas) energizes providing power to the heating circuit. Then the control monitors the Ready Thermostat and determines when the cavity is in "ready" condition.

NOTICE: If the door is open, the heating circuit will not be energized and the heating circuit will not turn on until the door is closed.

If the Ready Thermostat is at the required temperature and the STOP light is on, the heater control cycles the heating circuit power relay or gas valve and maintains the ready condition by cycling the elements 18 seconds ON, 6 minutes OFF.

If the MANUAL light is on, the heater control continuously turns on heat to produce steam.

A High-Limit thermostat is provided as a safety device on each steam reservoir to monitor the internal temperature of the steam reservoir. This thermostat is set for 250 degrees F and will shut down the steamer if there is very little or no water and the steamer cavity starts to overheat.

5. Draining Water From the Steam Reservoir

When water or steam is drained from the reservoir, it passes through a water spray in the drain box controlled by a water solenoid valve to condense the steam before it exits the steamer drain box into the drain line.

A solenoid drain valve is connected to each steam reservoir. This valve is normally open permitting water from the steam reservoir to drain out. When the ON switch is pressed, the steam generator drain valve closes and the steam reservoir starts to fill until the water level reaches the HIGH WATER float.

When the OFF switch is pressed, the solenoid valve opens and drains the water from the steam reservoir. When water is drained from the steam reservoir, it passes through the drain box and then into the drain line.

When the unit is turned off by the OFF switch, the system will drain for 3 minutes then refill to the high float, drain, refill, and drain a second time while showing "FL" in the time display. This is to remove the heat from the reservoir for cleaning and reduce any possible cavity warping.

* If hot water is exiting, the drain fan thermal switch could close and energize circuit giving a service error 7.

6. Low Water Level Detection

Below the HIGH WATER FLOAT is the LOW WATER FLOAT. This float detects a low level of water in the steam reservoir. Because prolonged operation with less than the required amount of water in the steam reservoir could present a dangerous situation, the action is immediate.

When the LOW water level float is uncovered,the heater is turned off.

3.1 Electric Model Installation

WARNING
The unit must be installed by personnel who are qualified to work with electricity and plumbing. Improper installation can cause injury to personnel and/or damage to the equipment. The unit must be installed in accordance with applicable codes.

CAUTION
Do not install the unit with the rear vents blocked or within 2 inches of a heat source such as a braising pan, deep fat fryer, charbroiler or kettle.

To avoid drainage problems, level the unit front to back, and pitch it slightly to the front.

1. Electrical Supply Connection

a. Panel Removal - Right side
Open the wiring and control panel by removing screws from the right side panel. Slide the panel forward and set it aside.

b. Supply Voltage
The unit must be operated at the rated name plate voltage. The name plate can be found on the right side panel.

c. Phase Selection
Refer to steamer wiring diagram and element wiring on pages 3.7, 4.11 and 4.12 for wiring information.

CAUTION
Each unit must have a separate ground wire for safe operation.

d. Terminal Block
The terminal block for incoming power is located at the back of the control compartment. The ground terminal is located in the wiring compartment near the terminal block.

e. Supply Wire
The equipment grounding wire must comply with the National Electrical Code (NEC) requirements.The wiring diagram on the inside of the unit's right side cover gives directions for proper connection of the terminal block to the supply power. The proper wire must be used or the unit will not meet Underwriters Laboratories and NEC requirements. The electric hole is sized for a 1" conduit fitting on the SSB-3E and SSB-5E. The electric hole is sized for a 1-1/4" conduit fitting on the SSB-10E.

f. Branch Circuit Protection
Each SmartSteam100 Boilerless Steamer, including individual units of stacked models, should have its own branch circuit protection and ground wire.
Current and power demands for each unit are as shown below.

AMPERAGE/RESISTANCE CHART

Model	Voltage/Phase	Amperage	Resistance
SSB-5E	208 3-PHASE	34	6.1
SSB-5E	240 3-PHASE	29	8.3
SSB-5E	480 3-PHASE	15	32
SSB-5E	208 1-PHASE	58	3.6
SSB-5E	240 1-PHASE	50	4.8
SSB-3E	208 3-PHASE	25	8.3
SSB-3E	240 3-PHASE	22	10.9
SSB-3E	480 3-PHASE	11	43.6
SSB-3E	208 1-PHASE	44	4.7
SSB-3E	240 1-PHASE	38	6.3
SSB-10E	208 3-PHASE	59	3.5
SSB-10E	240 3-PHASE	51	4.7
SSB-10E	480 3-PHASE	26	18.5

WARNING
To avoid damage or personal injury, follow the wiring diagram exactly when connecting the unit.

See further installation instructions.

3.2 Gas Model Installation

WARNING
The unit must be installed by personnel who are qualified to work with gas, electricity and plumbing. Improper installation can cause injury to personnel and/or damage to the equipment. The unit must be installed in accordance with applicable codes.

CAUTION
Do not install the unit with the rear vents blocked or within 2 inches of a heat source such as a braising pan, deep fat fryer, charbroiler or kettle.

To avoid drainage problems, level the unit front to back, and pitch it slightly to the front.

Although Groen recommends the SmartSteam100 Boilerless Steamer is installed near non-combustible surfaces, the following **minimum** clearances are to any surface, combustible or non-combustible.

Right Side . . . . . 2 inches
Left Side . . . . . 2 inches
Rear . . . . . 6 inches

However, for easy service, at least a 6 inch clearance should exist for right side access to gas shut-off valve.

The unit must be installed in a well-ventilated room with an adequate air supply. The steamer must be installed beneath a ventilation hood since gas combustion products exit the appliance.

Any item which might obstruct or restrict the flow of air for combustion and ventilation must be removed. Do not obstruct the flue cover or rear vents after installation.

The area directly around the appliance must be cleared of all combustible material. The installation must conform with local codes or, in the absence of local codes, with the National Fuel Gas Code, ANSI Z223.1/NFPA 54, or the Natural Gas and Propane Installation Code, CSA B149.1

The unit and its individual shutoff valve must be disconnected from the gas supply system during any pressure testing of that system which has test pressures in excess of 1/2 PSI (3.45 kPa). It must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system which has test pressures equal to or less than 1/2 PSI (3.45 kPa).

1. Electrical Supply Connection

Provide 115 VAC, 60 HZ, 1 PH, 15 AMP service. Bring wire in through hole on the back panel. Each cavity requires a separate cord for connection. Local codes and/or the National Electrical Code should be observed in accordance with ANSI/NFPA 70. **AN ELECTRICAL GROUND IS REQUIRED.** The wiring diagram located in the service compartment and in this manual. Maximum load is 2-1/2 AMPs. In Canada, provide electrical service in accordance with the Canadian Electrical Code, CSA C22.2 Part 1 and/or local codes.

2. Gas Supply Connection

Connection to the gas supply shall be in accordance with the chart below. Supply pressure must be at least 4.5" W.C. (maximum 14" W.C.) for natural gas or 12" W.C. (maximum 14" W.C.) for LP gas. In Canada, the installation must conform to the Canadian Gas Code, CAN 1-B149, Installation Codes for Gas Burning Appliances and Equipment and/or local codes. Check all gas connections for leaks prior to unit operation.

RATINGS FOR GAS SMARTSTEAM

MODEL	BTU	OPERATING PRESSURE	INCOMING GAS FEED RATE	
			MINIMUM	MAXIMUM
3G Natural	54,000	4.30" WC	5" WC	14" WC
3G Propane	54,000	10.5" WC	12" WC	14" WC
5G Natural	62,000	4.30" WC	5" WC	14" WC
5G Propane	62,000	10.5" WC	12" WC	14" WC
10G Natural	100,000	4.30" WC	5" WC	14" WC
10G Propane	100,000	10.5" WC	12" WC	14" WC

3.3 Installation

Many of the problems associated with the degraded performance or non-operation of the SmartSteam**100** Boilerless Steamer can be traced directly to improper installation and/or lack of proper and periodic cleaning–all of which is the responsibility of the customer.

This section is provided to determine that the equipment was installed correctly, to indicate the proper cleaning techniques are to be used by Groen customers and steamer test procedures.

It is to be expressly noted that ALL work associated with the installation and cleaning of the SmartSteam**100** Boilerless Steamer is NOT covered by the Groen warranty provisions.

3. Water Connection

Make sure that the incoming water connection is made with a 3/4" N.H. COLD water supply hose. Rigid pipe is not required. The water pressure should be between 30 and 60 PSIG. Higher pressures will require the use of a pressure regulator. Make sure that all connections are tight with no leaks–no matter how small.

NOTICE: The quality of the water is a factor in the proper performance of the steamer. The water supply should have a minimum value of 30-40 parts per million of total dissolved solid (TDS).

4. Level Installation

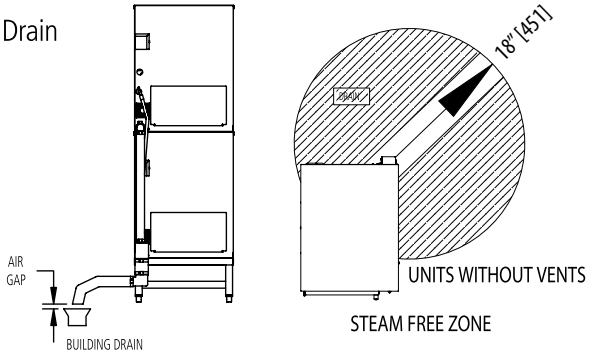
It is preferable that the steamer be installed level side to side (left to right) and slightly pitched (1 to 5 degrees) back to front, with the front always being lower than the rear. This allows the condensate water to go to the drain at the front of each cavity.

Make sure that all leg extensions are tight against the floor and that the steamer is supported on all four legs.

5. Drain Line Installation

The drain line should not be less than:
1-1/2" - for single units
2" (5E) - for double stacked units
There must be a 2 " air gap to the (non-pressurized) building drain. Make sure that the drain is sloped AWAY and DOWN from the steamer and that there are no obstructions in the line. Failure to observe these requirements may cause a water trap in the drain line and produce enough back pressure to prevent proper cavity draining–resulting in condensate water leaking from the door. Drain line must **NOT** be made of plastic pipe. It must be able to withstand boiling water.

Proper Drain



Do not install rear of unit within a 24" radius from the drain outlet to any steam producing device. Do not install steamer directly above steam venting floor drains.

If the floor drain "only" services this steamer, then the drain may be located within the steam-free zone. The steam-free zone must be observed if other appliances cause steam at the floor drain.

3.4 Installation Checklist

General

_____ Refer to section 3.3 for proper clearances.

_____ Do not install steamer directly above steam venting floor drain.

_____ Make sure the unit rear vents are not blocked and the unit is not within 2" of a heat source.

_____ Make sure steamer is level or pitched slightly forward.

_____ Check that fan is clean and clear of foreign materials.

Gas Connection Checks

_____ Make sure installation conforms to local codes.

_____ Make sure steamer is installed under a ventilation hood. Check that the flue and all vents are free of obstruction.

_____ Check that gas supply is 5" W.C. (min) to 14" W.C(max) for natural gas, and 12" W.C. (min) to 14" W.C(max) for propane.

_____ Check that gas supply piping is 1/2" NPT.

_____ Verify operating gas pressure is per chart in section 3.2.

Electrical Checks

_____ Make sure the steamer is properly grounded.

_____ Verify that the electrical connections conform to all local codes and the NEC requirements.

_____ Make sure the power supply branch circuit conforms to the specifications indicated on the steamer nameplate.

Steamer Door Check

_____ Make sure the door gasket is making good contact with the cavity frame.

_____ Instruct operators to leave the door open when the steamer is shut down overnight or longer.

Cold Water Supply Connections

_____ Make sure plumbing connections conform to local codes.

_____ If permitted by local codes, check that hose connection is flexible to allow steamer movement for servicing.

_____ Check inlet water pressure is 30-60 PSIG.

_____ Check that the water feed line is a minimum of 1/2" inside diameter

_____ Check water flow per chart in section 3.3.

Drain Connections

_____ Make sure drain plumbing connections comply with local codes.

_____ Make sure drain line is 1-1/2"and 2-1/2" on stacked units.

_____ Check that drain line is suitable for boiling water. Make sure PVC is not being used for drain plumbing.

_____ Check that drain line is pitched downward.

_____ Make sure drain line is free of obstruction.

_____ Make sure drain is not connected to a building drain.

3.5 Steam Reservoir Cleaning

Recommended Tools & Cleaners

- Nylon scrub pad, cloth or sponge. Scotch-Brite™ medium duty scrubbing sponges are preferred.
  Do NOT use metal scrub pads.
- Mild detergent soap.

Cleaning Steps

1. If unit has a code, turn off at rocker switch. Open the steamer door.
2. After the steamer has cooled completely, remove pans and pan racks.
3. Wipe down the steam lid after it has cooled completely, to remove any spilled food solids before you remove it for cleaning. Replace steam lid after cleaning.
4. Use a mild detergent to wipe down the entire steamer cavity, the pan racks, the steam lid and the probes.
   NOTICE: Use care when cleaning float probes. Floats can become disconnected from probe body if too much force is applied. Refer to label for orientation.
   Failure to clean the steamer as specified could negatively impact the performance of the steamer.
5. After cleaning the steamer, rinse the steamer to remove all traces of detergent and replace the pan racks and steam lid. Your SmartSteam100 Boilerless Steamer is now ready to use.

WARNING

Disconnect the power supply before cleaning the outside of the steamer. Keep water and cleaning solutions out of controls and electrical components. Never hose or steam clean any part of the unit.

Avoid contact with any cleanser, deliming agent or degreaser as recommended by the supplier. Many are harmful. Read the warnings and follow the directions.

Even when the unit has been shut off, don't put hands or tools into the cooking chamber until the fan has stopped turning.

Don't operate the unit unless the removable partition has been put back in its proper location.

Do not use any cleaning agent that contains any sulfamic agent or any chloride, including hydrochloric acid (HCl). To check for chloride content, see any material safety data sheets provided by the cleaning agent manufacturer.

3.6 General Cleaning

To keep your SmartSteam100 Boilerless Steamer in proper working condition, use the following procedure to clean the unit. This regular cleaning will reduce the effort required to clean the steam reservoir and cavity.

A. Suggested Tools

- Mild detergent or vinegar
- Stainless steel exterior cleaner such as Zepper®
- Cloth or sponge
- Spray bottle
- Nylon pad
- Towels
- Plastic disposable gloves

B. Procedure

Exterior Cleaning

a. Prepare a warm solution of the mild detergent as instructed by the supplier. Wet a cloth with this solution and wring it out. Use the moist cloth to clean the outside of the unit. Do not allow freely running liquid to touch the controls, the control panel, any electrical part, or on the side or rear panels.
b. To remove material which may be stuck to the unit use a fiber brush, or a plastic or rubber scraper with a detergent solution.
c. Stainless steel surfaces may be polished with a recognized stainless steel cleaner such as "Zepper".

Interior Cleaning

Clean the unit daily or as residue builds upon the bottom of the oven cavity.

a. Press OFF to turn the steamer off. Open the door.
b. Drain the water from the unit and allow the unit to cool before cleaning.
c. After the unit has cooled, remove pan and pan racks from the cavity.
d. Use a mild detergent to wipe down the steamer cavity, the probes on the Right panel, and the pan racks.

WARNING

DO NOT DISASSEMBLE FLOAT PROBES DURING CLEANING, BREAKAGE WILL RESULT. USE HOT WATER TO WASH OUT PIVOT JOINTS OF FLOAT.

e. Rinse the unit to remove detergent.
f. Attach pan racks. Unit is ready for use.

HEAVY USER DELIMING MAINTENANCE PROGRAM

Purpose

SmartSteam100 steamers are designed to require only a daily cleaning of the steamer cavity, pan racks, steam lid and floats to maintain full performance. Daily cleaning may not be sufficient to control scale build-up, when a SmartSteam100 steamer is operated in a heavy duty, continuous operation in an area with extreme hard water.

The following procedure outlines steps for optional periodic deliming for steamers in heavy duty applications and extreme water conditions. The frequency of the deliming depends upon the severity of the scale build-up and individual operators, but typically would not be more frequently than bi-monthly.

Recommended Tools & Cleaners

a. Nylon scrub pad, cloth or sponge. Scotch-Brite™ medium duty scrubbing sponges are preferred. **DO NOT** use metal scrub pads.

b. Delimer/Descaler - Groen Delimer Descaler (P/N 114800), Commercial Lime Away or any equivalent. **DO NOT** use any cleaning or deliming agent that contains Citric Acid, any Sulfamic agent or any chloride, including Hydrochloric Acid.

WARNING: Follow the handling instructions provided with the delimer/descaler, including the recommendations for protective rubber gloves, protective clothing/boots and protective eyewear.

c. Vinegar - commercial vinegar (5 to 7% strength) has been used successfully by a number of SmartSteam™ users as a descaler. Follow the same instructions as when using delimer/descaler.

IMPORTANT

Do not use any metal material (such as metal sponges) or metal implements (such as a spoon, scraper or wire brush) that might scratch any stainless steel surface. Scratches make the surface hard to clean and provide places for bacteria to grow. Do not use steel wool, which may leave particles imbedded in the surface which could eventually cause corrosion and pitting.

Cleaning Steps

WARNING! ALLOW THE STEAMER TO COOL COMPLETELY BEFORE DELIMING. HOT SURFACES CAN CAUSE SEVERE BURNS.

STEP 1 Press OFF to turn the steamer off. Open the steamer door.

STEP 2 Allow the steamer to cool completely before cleaning.

STEP 3 After the steamer has cooled completely, remove the pans and racks.

STEP 4 Remove any spilled foods from the steam lid. Remove the steam lid from the steam reservoir.

STEP 5 Press ON to turn the steamer on. Wait for the steam reservoir to start to fill.

NOTE: Use protective gear, including eyewear for the following steps involving delimer/descaler.

STEP 6 Add 1 cup of delimer/descaler (or vinegar) to the water in the steam reservoir, push TIMED, and set the timer for 20 minutes. Close the steamer door.

NOTE: ADDITIONAL AMOUNTS OF DELIMER AND LONGER TIME SETTINGS ARE NOT RECOMMENDED. THEY WILL NOT INCREASE THE EFFICIENCY OF THE PROCEDURE.

STEP 7 When the beeper sounds, press OFF to turn the steamer off. Open the steamer door and wait for the steam reservoir to drain.

STEP 8 Press ON to turn the steamer on and wait for the steam reservoir to again fill with water. Use a nylon scrub pad to remove the loosened scale.

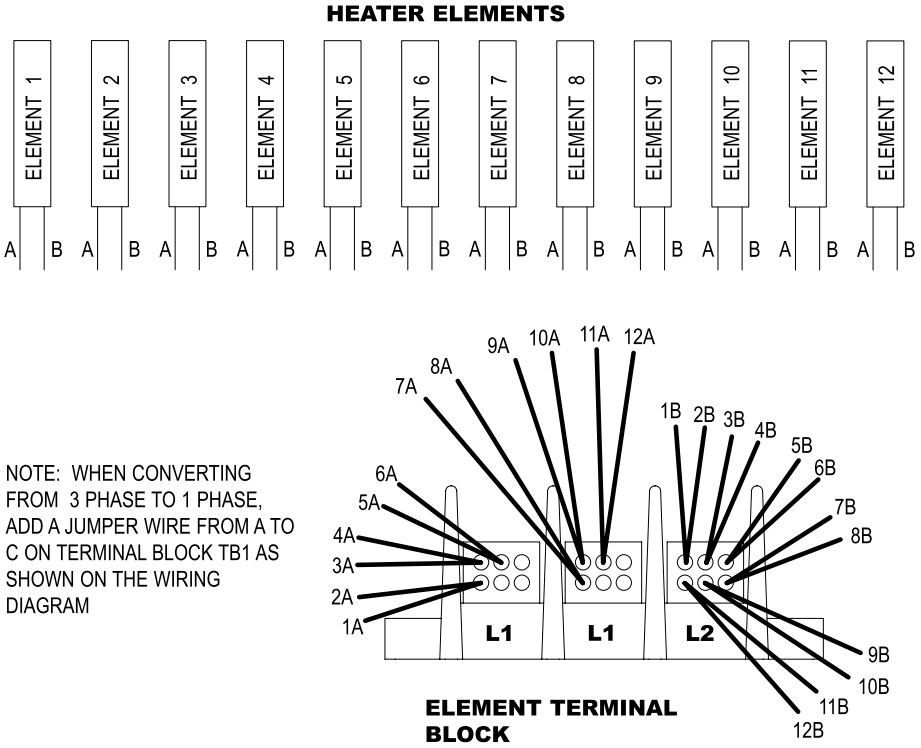
STEP 9 Press OFF to turn the steamer off and drain the water from the steam reservoir.

STEP 10 Wipe down steamer cavity and steam reservoir to remove all traces of scale and cleaning solution. Reinstall the pan racks and the steam lid.

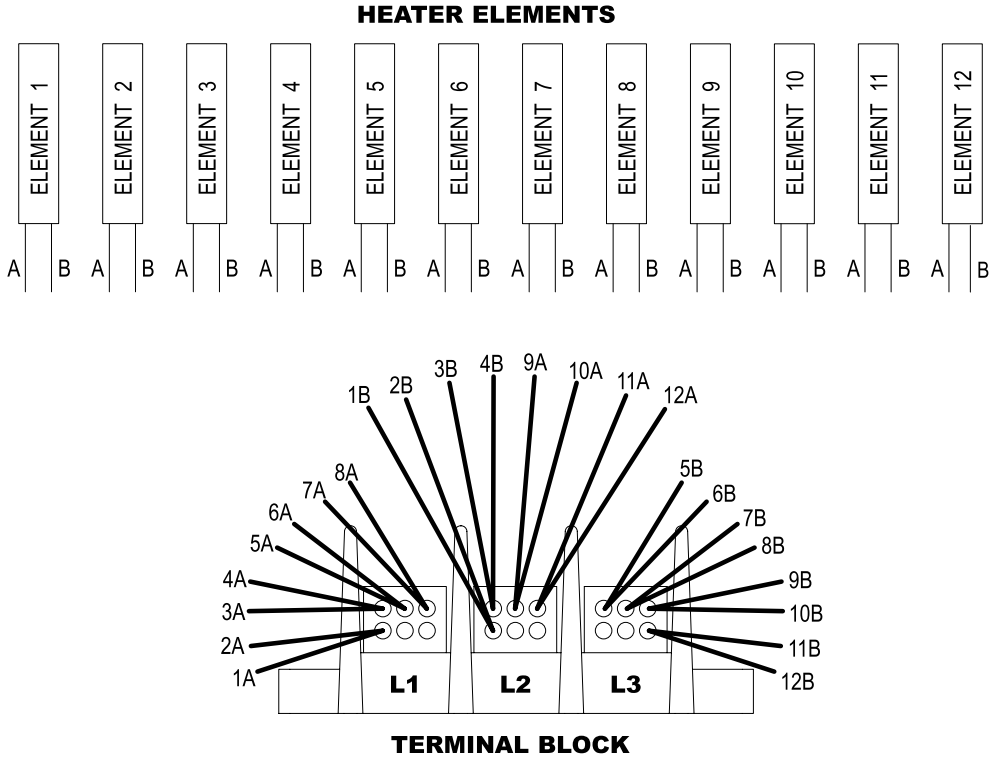
NOTE: IF SCALE BUILD-UP STILL REMAINS, REPEAT THE PROCEDURE (STEPS 5 - 10) AS NECESSARY.

3.7 Element Wiring SSB-5E

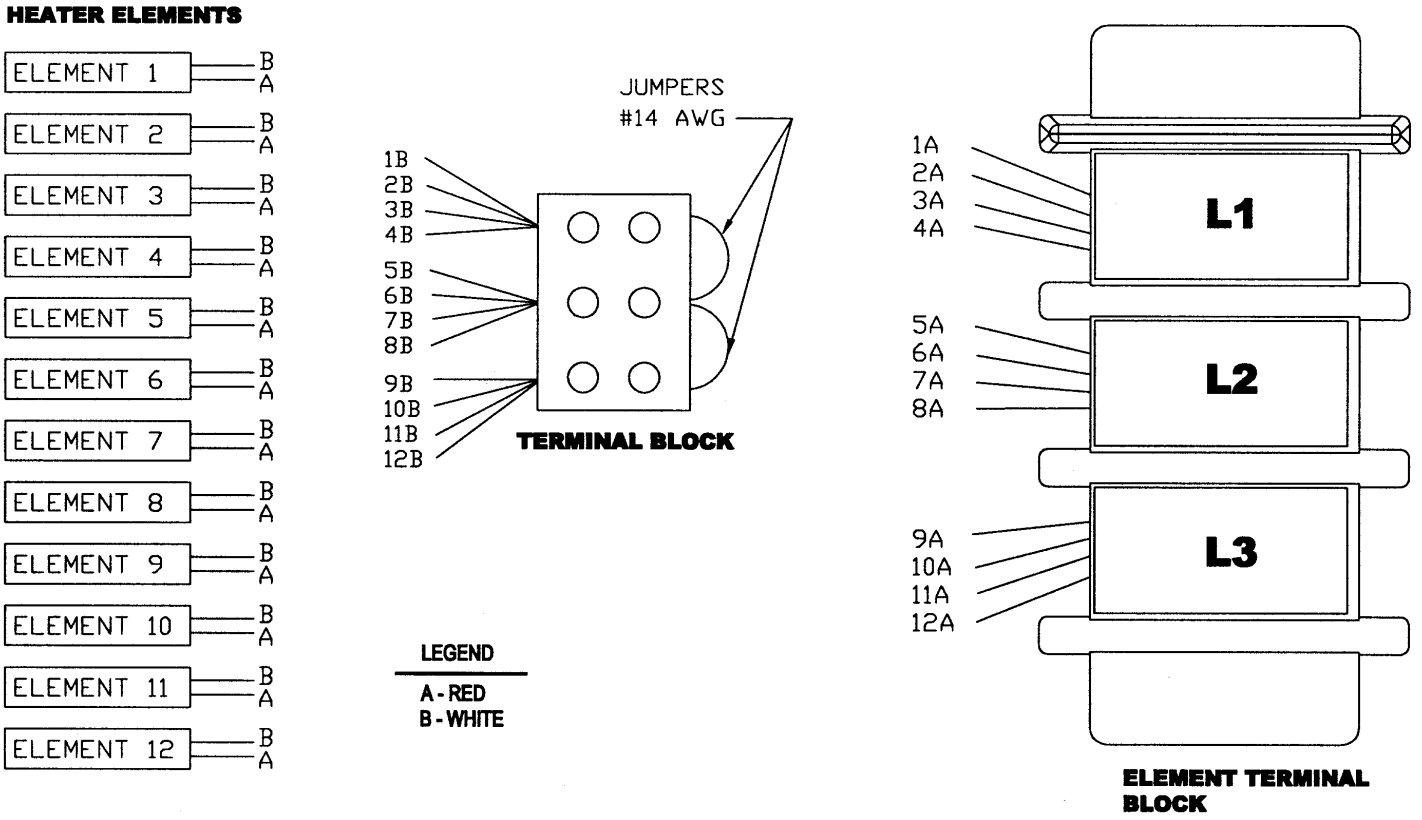
GROEN SSB-5E ELEMENT WIRING - 1 PHASE



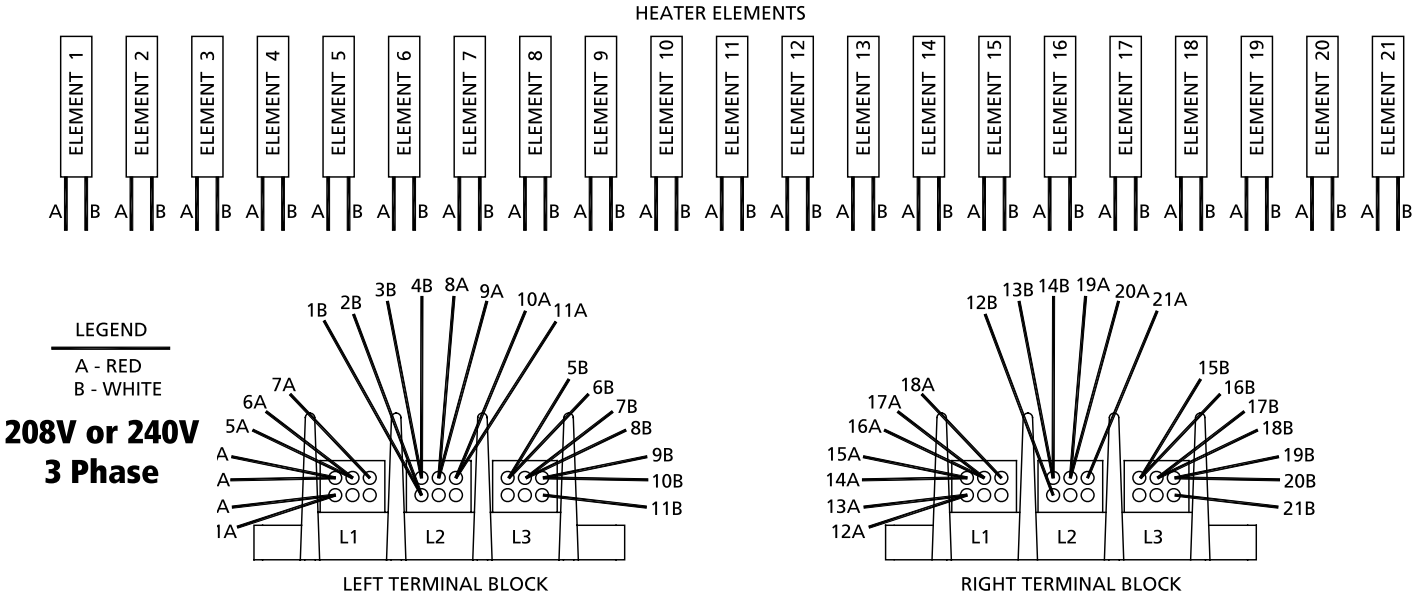
GROEN SSB-5E ELEMENT WIRING - 208 or 240 3 PHASE

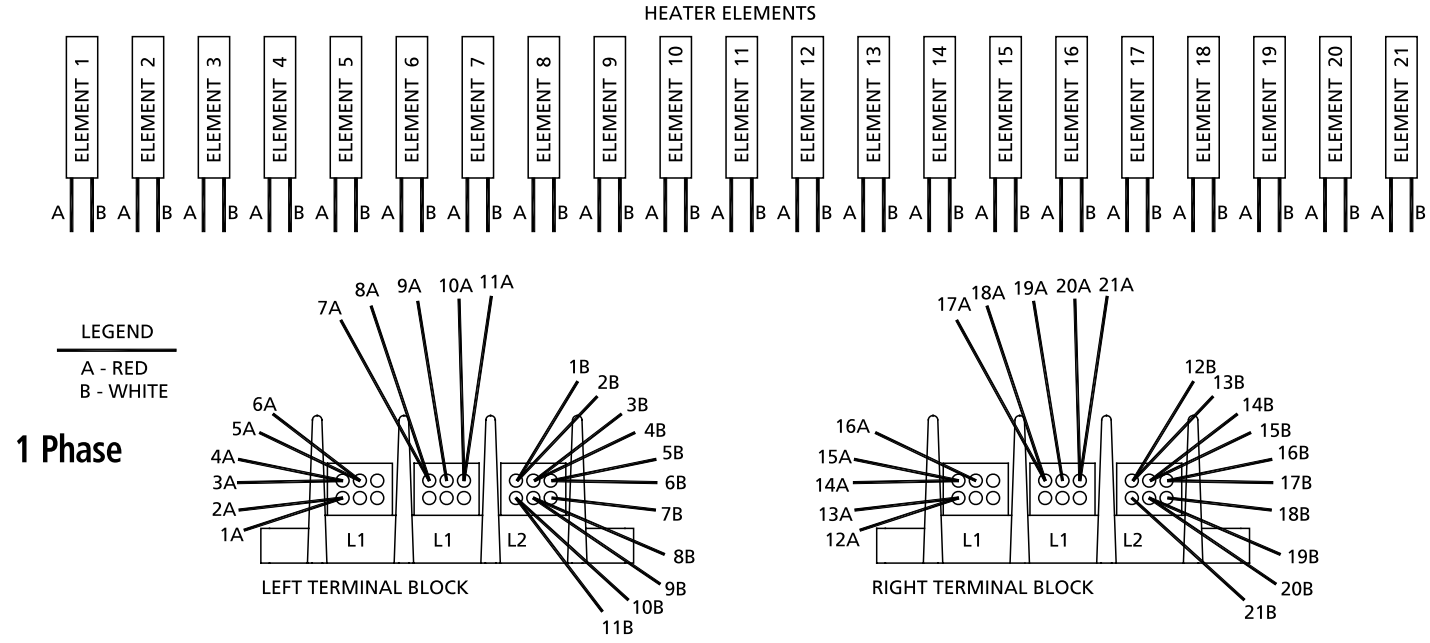


GROEN SSB5E ELEMENT WIRING - 480V 3 PHASE USING 277V ELEMENTS IN WYE CONFIGURATION

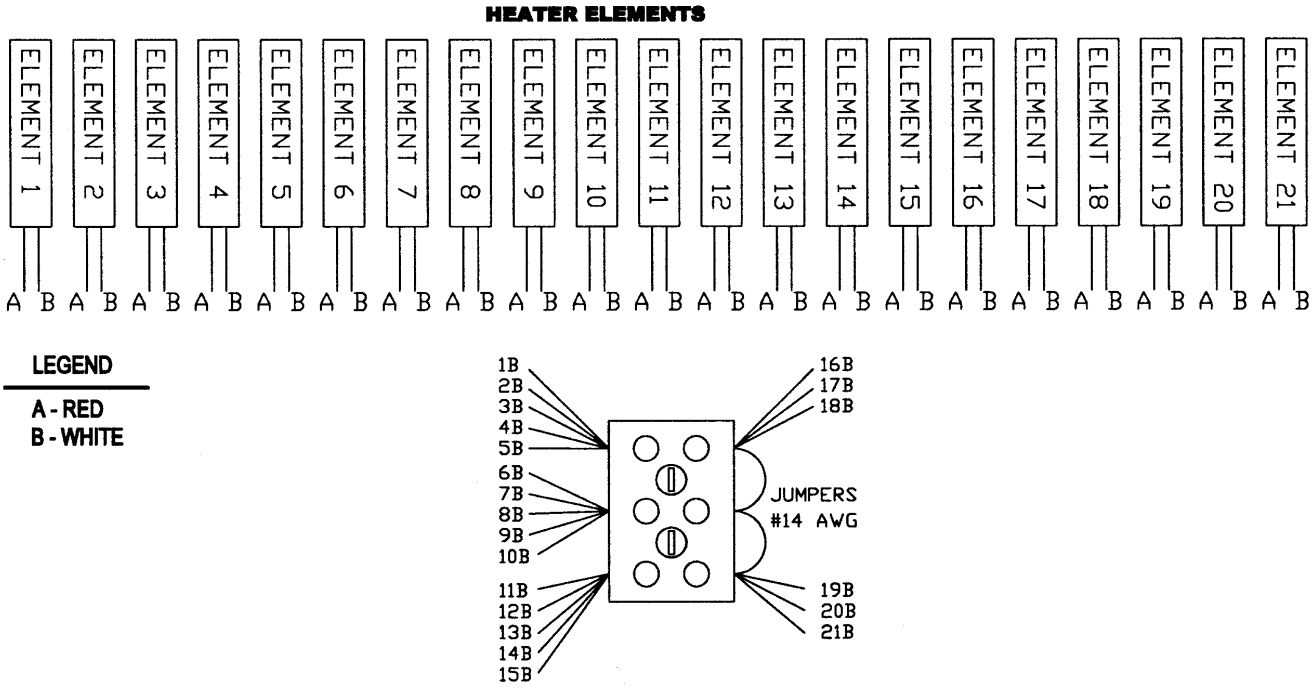


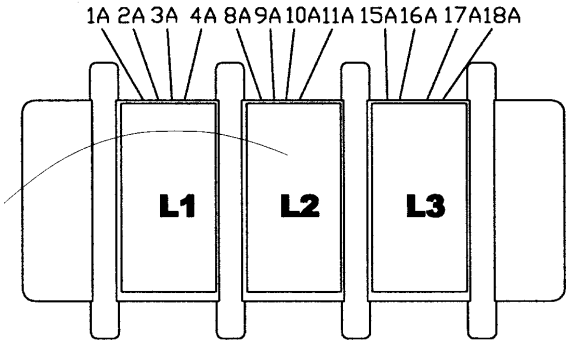
3.7 Element Wiring
SSB-10E


HEATER ELEMENTS
ELEMENT 1
ELEMENT 2
ELEMENT 3
ELEMENT 4
ELEMENT 5
ELEMENT 6
ELEMENT 7
ELEMENT 8
ELEMENT 9
ELEMENT 10
ELEMENT 11
ELEMENT 12
ELEMENT 13
ELEMENT 14
ELEMENT 15
ELEMENT 16
ELEMENT 17
ELEMENT 18
ELEMENT 19
ELEMENT 20
ELEMENT 21
A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B
LEGEND
A - RED
B - WHITE
208V or 240V
3 Phase
1A A A A 5A 6A 7A 1B 2B 3B 4B 8A 9A 10A 11A 5B 6B 7B 8B 9B 10B 11B
L1 L2 L3
LEFT TERMINAL BLOCK
12A 13A 14A 15A 16A 17A 18A 12B 13B 14B 19A 20A 21A 15B 16B 17B 18B 19B 20B 21B
L1 L2 L3
RIGHT TERMINAL BLOCK

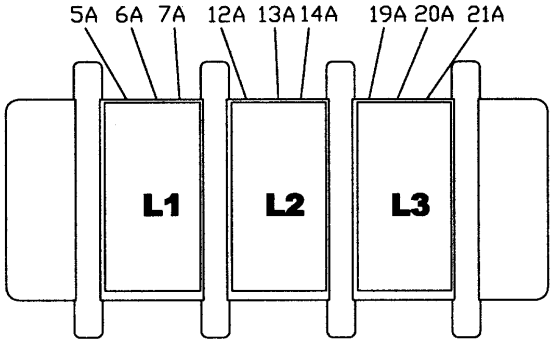

HEATER ELEMENTS
ELEMENT 1
ELEMENT 2
ELEMENT 3
ELEMENT 4
ELEMENT 5
ELEMENT 6
ELEMENT 7
ELEMENT 8
ELEMENT 9
ELEMENT 10
ELEMENT 11
ELEMENT 12
ELEMENT 13
ELEMENT 14
ELEMENT 15
ELEMENT 16
ELEMENT 17
ELEMENT 18
ELEMENT 19
ELEMENT 20
ELEMENT 21
A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B
LEGEND
A - RED
B - WHITE
1 Phase
1A 2A 3A 4A 5A 6A 7A 8A 9A 10A 11A 1B 2B 3B 4B 5B 6B 7B 8B 9B 10B 11B
L1 L1 L2
LEFT TERMINAL BLOCK
12A 13A 14A 15A 16A 17A 18A 19A 20A 21A 12B 13B 14B 15B 16B 17B 18B 19B 20B 21B
L1 L1 L2
RIGHT TERMINAL BLOCK

GROEN SSB-10E ELEMENT WIRING - 480V 3 PHASE
USING 277V ELEMENTS IN WYE CONFIGURATION



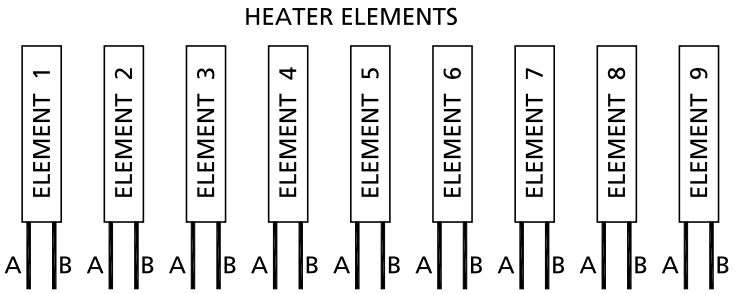


LEFT ELEMENT TERMINAL BLOCK



RIGHT ELEMENT TERMINAL BLOCK

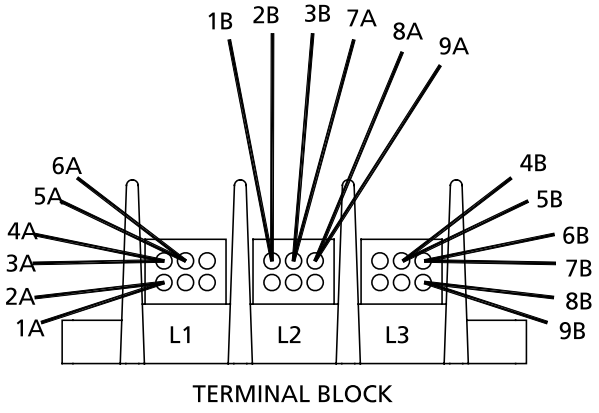
3.7 Element Wiring SSB-3E



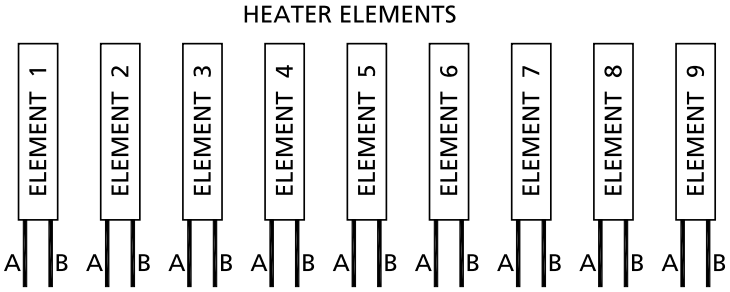
208V or 240V 3 Phase

LEGEND

A - RED
B - WHITE



TERMINAL BLOCK

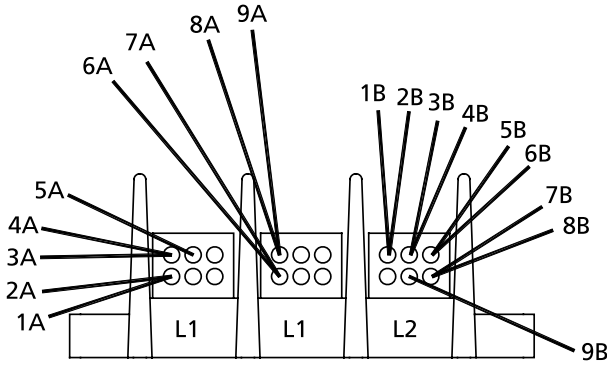


1 Phase

LEGEND

A - RED
B - WHITE

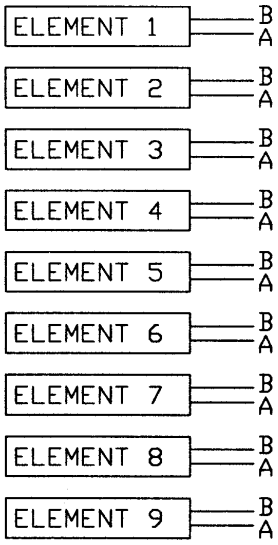
NOTE: WHEN CONVERTING FROM 3 PHASE TO 1 PHASE, ADD A JUMPER WIRE FROM A TO C ON TERMINAL BLOCK TB1 AS SHOWN ON THE WIRING DIAGRAM

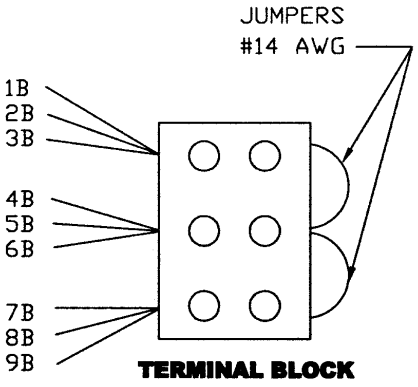


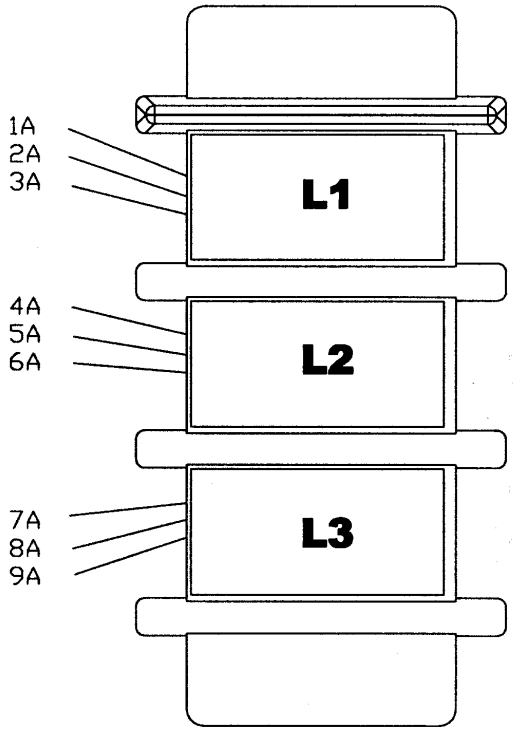
ELEMENT TERMINAL BLOCK

GROEN SSB3E ELEMENT WIRING - 480V 3 PHASE
USING 277V ELEMENTS IN WYE CONFIGURATION

HEATER ELEMENTS







LEGEND

A - RED
B - WHITE

4.1 SSB Checkout

1. Apply power to the SSB. On the back of the front-panel control board, flip the left DIPswitch up to start the diagnostics.
2. The red 7-segment display on the front panel should have some of its segments lit. If they are not then check the fuse and circuit breaker on the control transformer. Then check that all harnesses are in place and that the connectors are properly seated. Check for 24 VAC at the secondary of the control transformer.
3. Turn the knob so that the red display shows A3 (Analog 3 – Control board temperature). The green display should show approximately 75.
4. Turn the knob to A4 (Analog 4 – Line voltage). The green display should show the approximate line voltage. It may read quite high.
5. Turn the knob to b (button). Push each button. The light near the button should light. Also, check that pushing the top two buttons makes the bottom two lights go out.
6. Turn the knob to F (Firmware version). The green display should show version 1.18 or greater. Upgrade the code (swap the board) if the version is incorrect.
7. Turn the knob to P (Product code). The green display should show 008 for an SSB-G or 009 for an SSB-E. If any other number is displayed the ribbon cable connecting the front-panel control board to the relay board is incorrect.
8. Turn the knob to S (Sensors). As each sensor is activated the associated green bar will light. If it doesn't then that sensor or harness connection is faulty. Refer to this diagram:

Hi Float	Box Temp	Power
Lo Float	Overtemp	
Door Open	Ready	

9. Lift the hi float. The Hi Float bar should light. Release the float.
10. Lift the lo float. The Lo Float bar should light. Release the float.
11. Close and open the door. The Door Open bar should go out when the door is closed. Use a magnet to check the door switch on the other side. The bar should go out when the magnet is near the door sensor.
12. Push the ON end of the rocker switch. The Power bar should light. Push the OFF end of the switch. The bar should go out.
13. On the left side of the SmartSteam100, near the two water valves, disconnect one of the terminals on the overtemp thermostat. The Overtemp bar (the one in the middle of the display) should light. Reconnect the terminal. The Overtemp (middle) bar should go out.
14. Use needle nose pliers or a jumper to short the thermostat on top of the drain box. The Box Temp (top) bar should light. Remove the pliers or jumper. The Box Temp (top) bar should go out.
15. Turn the knob to 01 (Output 1 - Shutdown). Push the ON (upper) end of the rocker switch. A relay on the Relay Board should pull in. Push the MANUAL button. The relay should drop out.
16. Turn the knob to 02 (Output 2 – Fill valve). Push the MANUAL button a few times. The fill valve should open whenever the button is pushed.
17. Turn the knob to 03 (Output 3 – Spray valve). Push the MANUAL button a few times. The spray valve should open whenever the button is pushed.
18. Turn the knob to 04 (Output 4 – Drain valve). Push the MANUAL button a few times. The drain valve should open whenever the button is pushed.
19. SSB-E Turn the knob to 06 (Output 6 - Heater). Push the ON end of the rocker switch. Lift the lower float all the way up and hold it up. Push the MANUAL button a few times. The large contactor on the high voltage panel should pull in whenever the button is pushed. Check for proper line current on all three phases when the button is pushed. Note: For the heater to turn on the power must be on, the lower float must be up, and the overtemp thermostat must be operating properly.
20. SSB-G Turn the knob to 06 (Output 6 - Burner). Push the ON end of the rocker switch. Lift the lower float all the way up and hold it up. Push the MANUAL button and hold it in. The burner should light. Carefully check the flue to verify flame. Release the MANUAL button to turn off the burner. Note: For the burner to turn on the power must be on, the lower float must be up, and the overtemp thermostat must be operating properly.
21. Turn the knob to 07 (Output 7 – Fan). Push the MANUAL button. The fan should run.
22. Turn the knob to 08 (Output 8 – Beeper). Push the MANUAL button. The beeper should beep.
23. Turn the knob to 88. All lights and all display segments should light.
24. On the back of the front-panel control board, flip the left DIPswitch down to start normal SSB operation. The red heartbeat LED on the back of the control board should blink about once a second.
25. Perform the normal SSB checkout (fill, check steam production, drain, etc.).

Diagnostic Switch Summary

A1	Analog 1 – RTD temperature (VRC only)
A2	Analog 2 – RTD millivolts (VRC only)
A3	Analog 3 – Control board temperature
A4	Analog 4 – Line voltage
b	Button test
F	Firmware version
01	Output 1 – Shutdown
02	Output 2 – Fill valve
03	Output 3 – Spray valve (SSB only)
04	Output 4 – Drain valve (SSB only)
05	Output 5 – Eductor valve
06	Output 6 – Heater (ON and low float up)
07	Output 7 – Fan
08	Output 8 – Beeper
P	Product code
S	Sensor outputs
88	All lights on

Error Codes

1	Lo float changed state while hi float on, Fatal
2	Hi float changed state while lo float off, Fatal
3	Cold fill to hi float time exceeded, Fatal
4	Hot refill to hi float time exceeded, Fatal
5	Controller temperature exceeded, Fatal
6	Cavity temperature exceeded, Fatal
7	Drain box temperature exceeded
8	Drain time exceeded
9	RTD is open (VRC only), Fatal
10	RTD is shorted (VRC only), Fatal
11	Control board is too hot, Fatal
99	No product code in connecting cable, Fatal

Product Codes

1	VRC manual fill
3	VRC auto fill
8	SSB gas
9	SSB electric

4.2 Procedures

SETUP	EXPECTED RESULTS	PROBABLE DEFECT	TEST or COMMENTS
Measure input voltage and compare to rating plate.	Input voltage is within 10% of rated voltage.	Wrong model (voltage) installed.	Notify customer
Check input power to determine if it is three phase or single phase.	Steamer wiring matches incoming power.	Wrong model ordered. Change wiring at terminal block to match incoming power.	When converting from three phase to single phase, do not exceed amperage of breaker or power cord / plug.
Disconnect or turn off water supply, open door, push OFF switch.	24vac on secondary transformer. Heartbeat LED on back of control board flashes once a second.	No line voltage	Standard test
		Blown 6 amp fuse F1 or F2	Standard test
		480v unit only-toroid circuit breaker	*Reset breaker*
		480v unit only-toroid transformer	*Measure 480vac in and 240 vac +/- 20%vac out*
		24 volt control transformer	Measure 208 or 240vac in and 24vac +/- 20% out
		Breaker on 24 volt transformer	Reset breaker
		Control board or Relay board	Substitute to test
		Incorrect wiring	Check wiring diagram
Press ON switch	LEDs on control board illuminate.	24 volt control transformer	Measure 208 or 240vac in and 24vac +/- 20% out
		Hi-Limit (auto-reset)	Service code 6. Measure for continuity, normally closed. Run sensor diagnostic.
		Control board or Relay board	Substitute to test
		Incorrect wiring	Check per wiring diagram
Reconnect or turn on water supply	Muffin fan operates.	Low water float	Run sensor diagnostic

SETUP	EXPECTED RESULTS	PROBABLE DEFECT	TEST or COMMENTS
		Fill Valve	Fill valve is normally open when water is below hi float, 24VAC is applied to coil or valve and it opens. When water reaches hi-float, the coil de-energizes. **Run fill valve diagnostic.**
		Drain valve	Without power, the valve is open, when 24VDC is applied to the coil or the valve, it energizes to prevent draining. **Run drain valve diagnostic.**
		Muffin fan	Verify 24VDC across muffin fan coil.
		Control board or Relay board	Substitute to test
		Incorrect wiring	Check per wiring diagram
Set timer to OFF and close door	Audible click as contactor pulls in	Door switch	**Run sensor diagnostic.**
		Incorrect wiring	Check per wiring diagram
		Contactor K3	Verify 24VAC across K3 coil.
	About 20 minutes after closing the door, the ready light comes on.	Ready thermostat	Normally closed, opens at about 180° F.
		Contactor K3	Verify 24VAC across K3 coil.

SETUP	EXPECTED RESULTS	PROBABLE DEFECT	TEST or COMMENTS
		Heater element	Measure amperage for each leg and compare to chart on page 3-1 If amperage is incorrect, disconnect power, disconnect leads then measure heater resistance (cold) and compare to chart on page 4-10. If resistance is not within 20% specified, replace heater element.
		Incorrect wiring	Check per wiring diagram
	With ready light on, condensate water flows.	Condensate spray valve	**Run spray valve diagnostic**
		Control board	Check for 24VAC output
		Incorrect wiring	Check per wiring diagram
Push TIMED and set timer to 1 minute.	**Timer times out and unit beeps until CANCEL is pushed.**	Control board	Substitute to test
Push MANUAL and let tun for about 10 seconds.	Open door and verify fan is rotating (fan will gradually stop when door is opened).	Start capacitor	Standard test
		Internal thermal protector on fan motor	Measure black to white motor leads. 35 +/- 20% ohms
		Fan motor	Measure orange to brown motor leads. 35 +/- 20% ohms. Red to blue 42 +/- 20% ohms.
		Relay board	**Run fan diagnostic, substitute to test**
		Incorrect wiring	Check per wiring diagram
Turn rocker switch OFF.	**Cavity drains.**	Drain valve	Drain valve is normally open until 24 vdc is applied, then it closes.
		Control board	**Run drain valve diagnostic**
		Incorrect wiring	Check per wiring diagram
	No defect found but customer complaint is that unit is slow to heat.	Customer may be opening door frequently to add or remove food	Talk to customer

CONGRATULATIONS! The unit is operating correctly.

SETUP	EXPECTED RESULTS	PROBABLE DEFECT	TEST or COMMENTS
Measure input voltage and amps.	Input voltage is within 10% of rated voltage and 15 amps.	Wrong model (voltage) installed to incoming power supply.	Notify customer
Verify gas supply Propane or Natural, and pressures.	Correct gas source and pressure.	Wrong model ordered.	Gas conversion not performed in the field.
Disconnect or turn off water supply, open door, push OFF switch.	24vac on secondary transformer. Heartbeat LED on back of control board flashes once a second.	No line voltage	Standard test
		Blown 6 amp fuse F1 or F2	Standard test
		24 volt control transformer	Measure 120vac in and 24vac +/- 20%vac out
		Breaker on 24 volt transformer	Reset breaker
		Control board or Relay board	Substitute to test
		Incorrect wiring	Check wiring diagram
Press ON switch	LEDs on control board illuminate.	24 volt control transformer	Measure 120vac in and 24vac +/- 20%vac out
		Hi-Limit (auto-reset)	Service code 6. Measure for continuity, normally closed. Run sensor diagnostic.
		Control board or Relay board	Substitute to test
		Incorrect wiring	Check per wiring diagram
Reconnect or turn on water supply	Muffin fan operates.	Low water float	Run sensor diagnostic

SETUP	EXPECTED RESULTS	PROBABLE DEFECT	TEST or COMMENTS
		Fill Valve	Fill valve is normally open when water is below hi float, 24VAC is applied to coil or valve and it opens. When water reaches hi-float, the coil de-energizes. **Run fill valve diagnostic.**
		Drain valve	Without power, the valve is open, when 24VDC is applied to the coil or the valve, it energizes to prevent draining. **Run drain valve diagnostic.**
		Muffin fan	Verify 24VDC across muffin fan coil.
			Substitute to test
		Incorrect wiring	Check per wiring diagram
Set timer to OFF and close door	**Audible click as gas valve opens.**	Door switch	**Run sensor diagnostic.**
		Incorrect wiring	Check per wiring diagram
		Gas valve	**Verify 24VAC across valve coil.**
	About 20 minutes after closing the door, the ready light comes on.	Ready thermostat	Normally closed, opens at about 180° F.
		Gas valve	**Verify 24VAC across valve coil.**

SETUP	EXPECTED RESULTS	PROBABLE DEFECT	TEST or COMMENTS
		Burners	**Check gas valve 24VAC and gas supply.**
	With ready light on, condensate water flows.	Condensate spray valve	**Run spray valve diagnostic**
		Control board	Check for 24VAC output
		Incorrect wiring	Check per wiring diagram
Push TIMED and set timer to 1 minute.	**Timer times out and unit beeps until CANCEL is pushed.**	Control board	Substitute to test
Push MANUAL and let run for about 10 seconds.	Open door and verify fan is rotating (fan will gradually stop when door is opened).	Start capacitor	Standard test
		Internal thermal protector on fan motor	Measure black to white motor leads. 35 +/- 20% ohms
		Fan motor	Measure orange to brown motor leads. 35 +/- 20% ohms. Red to blue 42 +/- 20% ohms.
		Relay board	**Run fan diagnostic, substitute to test**
		Incorrect wiring	Check per wiring diagram
Turn rocker switch OFF	Cavity drains	Drain valve	Drain valve is normally open until 24 vdc is applied, then it closes.
		Control board	**Run drain valve diagnostic**
		Incorrect wiring	Check per wiring diagram
	No defect found but customer complaint is that unit is slow to heat.	Customer may be opening door frequently to add or remove food	Talk to customer

CONGRATULATIONS! The unit is operating correctly.

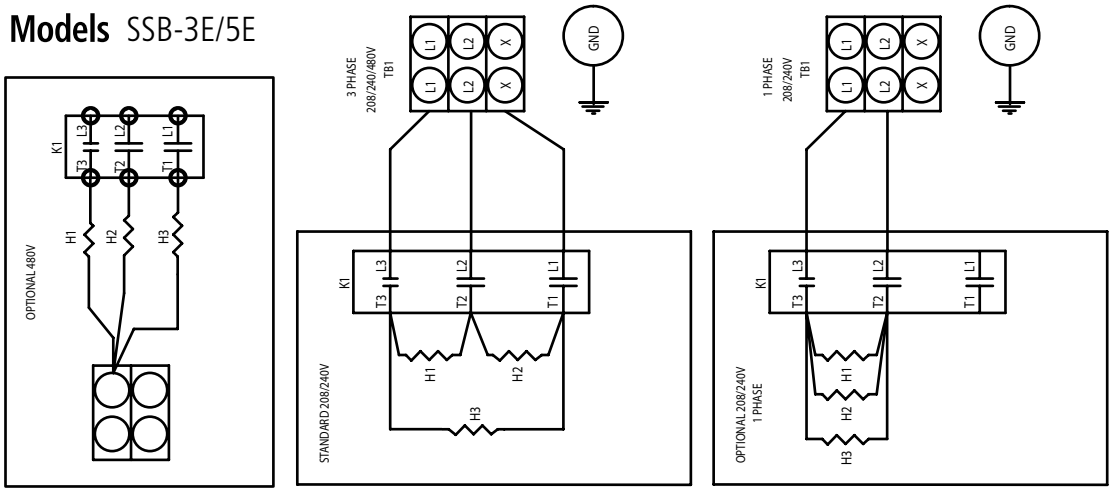
FILL TIMES BEFORE ERROR

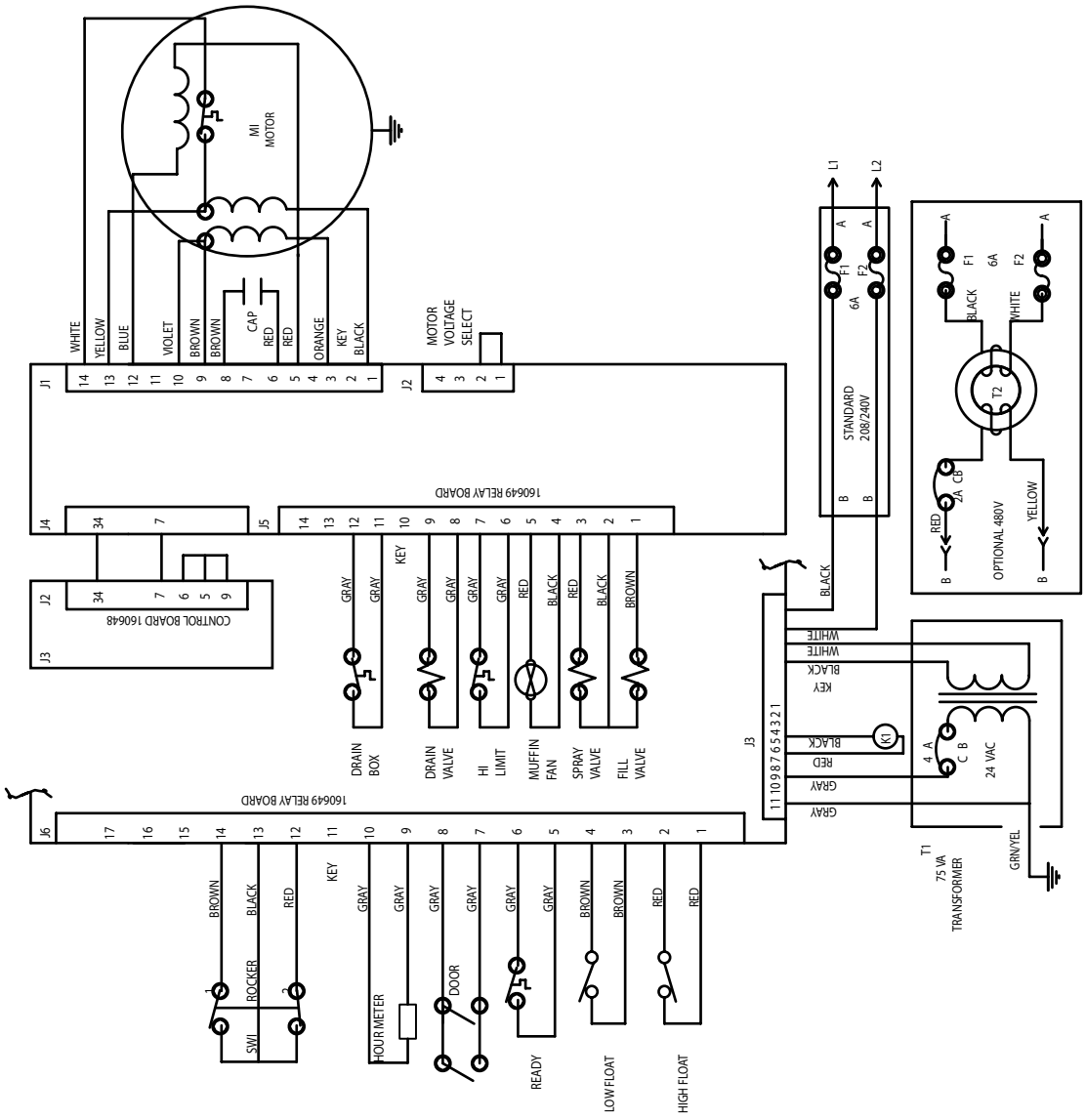
Empty to above hi float	20 minutes
Below lo float to above hi float	10 minutes
Below to above hi float	5 minutes

AMPERAGE/RESISTANCE CHART			
Model/Voltage/Phase		**Amperage**	**Resistance**
SSB-5E	208 Three Phase	34	6.1
SSB-5E	240 Three Phase	29	8.3
SSB-5E	480 Three Phase	15	32
SSB-5E	208 Single Phase	58	3.6
SSB-5E	240 Single Phase	50	4.8
SSB-3E	208 Three Phase	25	8.3
SSB-3E	240 Three Phase	22	10.9
SSB-3E	480 Three Phase	11	43.6
SSB-3E	208 Single Phase	44	4.7
SSB-3E	240 Single Phase	38	6.3
SSB-10E	208 Three Phase	59	3.5
SSB-10E	240 Three Phase	51	4.7
SSB-10E	480 Three Phase	26	18.5

GAS ORIFICE SIZE CHART (ALTITUDE ABOVE SEA LEVEL IN FEET)						
Natural	**5G Size**	**5G P/N**	**10G Size**	**10G P/N**	**3G Size**	**3G P/N**
Blank	Blank	145645	Blank	145645	Blank	145645
0-2000	#39 (.0995)	145646	#41 (.0960)	145993	2.40 mm (.0945)	147132
2001-4000	#40 (.0980)	145647	3/32 (.0938)	145648	2.35 mm (.0925)	147133
4001-6000	3/32 (.0938)	145648	2.25 mm (.0886)	145994	2.25 mm (.0886)	145994
6001-8000	2.3 mm (.0906)	145649	2.15 mm (.0846)	145995	#44 (.0860)	147134
Propane	**5G Size**	**5G P/N**	**10G Size**	**10G P/N**	**3G Size**	**3G P/N**
0-2000	1.65 mm (.0650)	145716	1.45 mm (.0571)	145996	#53 (.0595)	145986
2001-4000	1/16 (.0625)	145717	#54 (.0550)	145997	1.50 mm (.0591)	145719
4001-6000	1.55 mm (.0610)	145718	1.35 mm (.0531)	145998	1.45 mm (.0571)	145996
6001-8000	1.50 mm (.0591)	145719	#55 (.0520)	145999	#54 (.0550)	145997

4.4 Electric Models SSB-3E/5E





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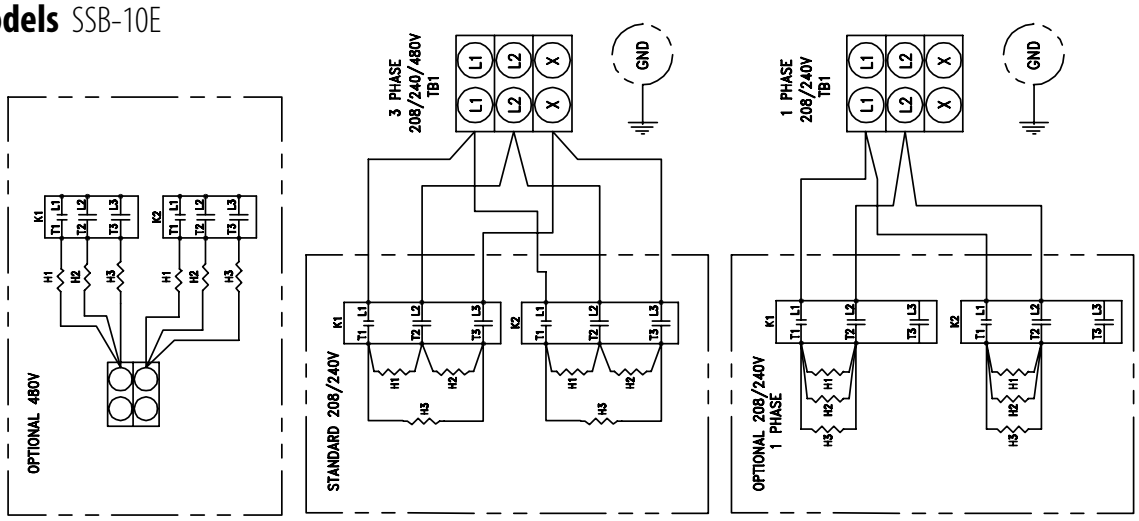
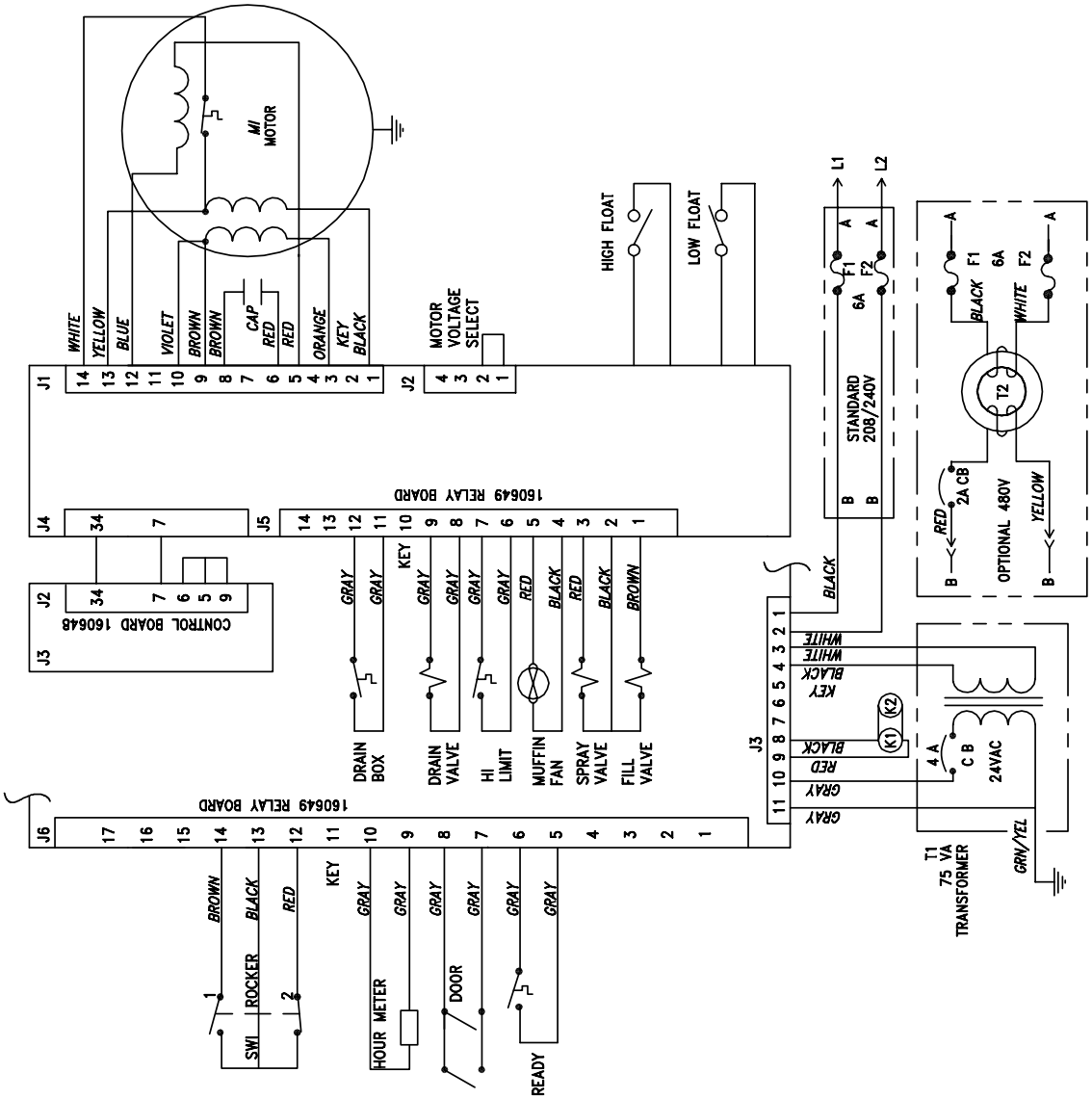
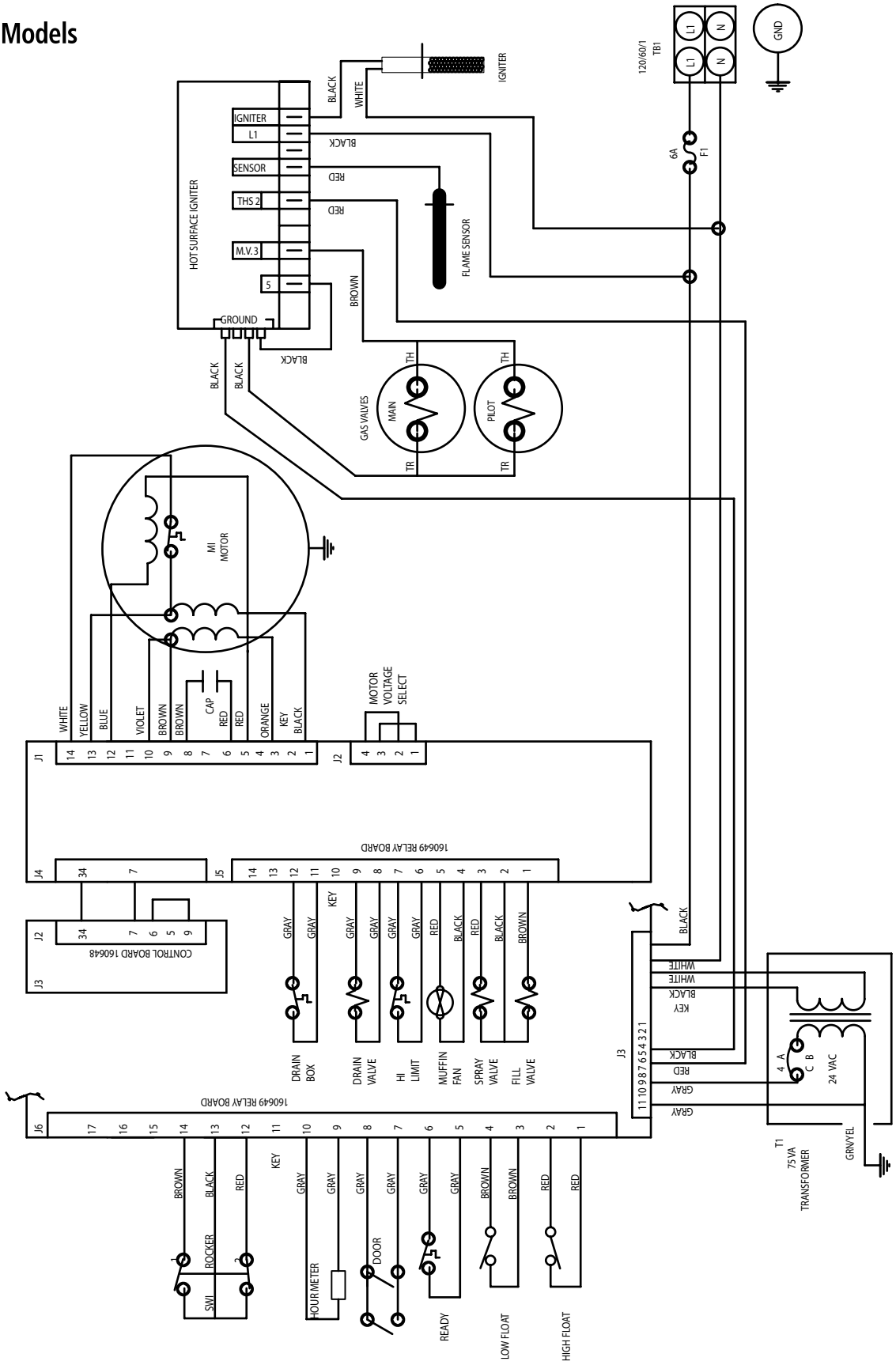




4.4 Gas Models



5.1 General Information

This section provides common removal and installation procedures for parts used in more than one model of SmartSteam100 Boilerless Steamers. When Part Numbers differ by Steamer Model, the Part Numbers are not given in this section.

The following procedures are based upon having access to the steamer on all four sides. If the steamer is installed between other appliances and there is not enough room on the sides for access, the steamer must be pulled out from its position to gain proper access.

Care should be taken in moving the steamer so as not to stress or pull on the electrical, gas, and water connections.

WARNING
After servicing gas piping on gas models, check for gas leaks before putting unit back in service.

5.2 Cavity Compartment Side Panels

For Part Number, see section on the Steamer Model

Removal

1. With a flat blade screw driver remove the two 10-32 screws on the lower edge of the panel and one at the top edge (at the center of the top panel overhang). The panel is retained to the steamer by these three screws and three spring-like clips at the rear edge.
2. Once the screws are removed, the panel can be pulled forward about 1 inch, then lowered from behind the top panel overhang.

5.3 Top Cover

For Part Number, see section on the Steamer Model

Note: Under normal conditions the top cover should never have to be removed. The most likely reason for removing it is if the panel itself has been damaged by a falling object.

1. Remove right side and left side panels
2. At the front on each side, remove the screw holding a top cover retainer (see illustration) to the top cover. Then slide the cover forward until clear of the rear clips, and lift off.

ASSEMBLY TIP In replacing the top cover, make sure that both retainers are replaced and screwed down tight.

5.4 Steamer Control PC Board P/N 160648

WARNING
Disconnect the steamer from electric power before beginning any service procedures.

Removal

1. Unplug the ribbon connectors.
2. Remove timer knob.
3. Using a 5/16" socket, remove five 6/32" lock nuts and remove the board from five studs on the front panel. Be careful not to lose the plastic washers below each nut.

Installation

4. Position the board on five studs below the timer.
5. Install 6/32" lock nuts with washers. Use a 5/16" socket to tighten them in place.
6. Insert ribbon jack. Press firmly to make sure the jack is fully seated on the board.
7. Replace the knob.

5.5 Relay Board P/N 160649

Removal

1. Unplug all connectors.
2. Using a 5/16" socket, remove fout 6/32" lock nuts and remove the board from four studs on the high voltage panel.

Installation

3. Position the board on four studs on the high voltage panel.
4. Install 6/32" lock nuts onto the studs and tighten in place using a 5/16" socket.
5. Insert all jacks in the same connector locations as per removal. Press firmly to make sure the jack is fully seated on the board.

5.6 Steam Reservoir Drain Valve P/N 071234

Note: When the steam reservoir drain valve is deenergized or OPEN), the silicone hose can freely slide through the valve housing. The steam reservoir drain valve is located to the right of the steamer cavity.

Removal

1. Turn off power and disconnect steamer from branch circuit. Remove right side panel. Let steamer drain completely.
2. Using spring clamp pliers, disconnect ONE END of the silicone drain hose by loosening the drain hose clamp from the drain fitting coming from the cavity drain. Remove clamp.
3. Unplug the valve electrical wires.
4. With a 5/16 inch nutdriver, remove the two 10-32 screws holding the drain valve to the bracket on the steamer base.
5. Remove the two 10-32 screws and remove the valve from the bracket.
6. Loosen the clamp and remove the other end of the silicone hose from the drain box. Inspect the hose for any damage or lime buildup. Clean or replace the hose if required, then reattach to the steam reservoir drain fitting.

Installation

7. Attach new drain valve to valve bracket. Slide the silicone hose through the drain valve housing and install hose clamp over the exposed end of the hose. Check that the hose is straight and not twisted.
8. Fit the exposed end of the silicone hose onto the elbow of the cavity drain. Using spring clamp pliers, position and tighten the hose clamp.
9. Plug the electrical leads of the valve into the wiring harness. Connect steamer to branch circuit, and turn on power.

Testing

Operate steamer and allow steam reservoir to fill. Check for leaks and observe if drain valve fully closes. Turn off steamer and observe that drain valve opens and the steam reservoir drains.

10. Reinstall right side panel.

5.7 Door Removal/Installation/Alignment

For Part Number, refer to section on Steamer Model

Removal

1. To remove the door, turn off the steamer power and allow the steamer to cool. Then open the door and, while supporting the weight of the door, remove hinge pin or remove door-to-hinge bolts.
2. Place the door on a flat, clean table or similar support, with gasket facing up. Be careful not to scratch door surface.
3. Inspect door gasket for signs of cuts, or other defects which may impair its function. Replace if necessary.

NOTE: Gasket not covered under terms of warranty.

Installation

4. To install the door, apply NEVER-SEEZ lubricant to hinge pin. Align door with hinge and insert hinge pin, or apply Locktite 242 to the door-to-hinge bolts, then install door and mounting bolts. Snug bolts only. Do NOT tighten mounting bolts at this time.

Alignment

5. Place a piece of masking tape over the door latch pin (bullet) hole in the door.
6. Close the door until the door latch pin just penetrates the masking tape. Make sure the door pin contacts only the door latch spring.
7. If door pin does not strike the center of the masking tape or spring hole in he U-channel, loosen the hinge-to-oven bolts and align the door to the door pin. Tighten hinge-to-oven mounting bolts.
8. You should be able to pull a dollar bill or comparable piece of paper with some effort, from between the gasket and steamer cavity with the door closed. To adjust the hinge side, loosen the door-to-hinge bolts and align the door gasket with the oven cavity. Tighten the door-to-hinge mounting bolts.
9. Operate steamer and check for leaks.

5.8 Door Reversal Procedures

1. Turn off steamer power and allow steamer to cool.
2. To remove door, support door while removing hinge-to-steamer bolts.
3. Place door with hinge on a flat, clean table (or similar support), with the gasket facing up. Be careful not to scratch door surface.

NOTE: Do not remove the hinge from the door.

4. Note and record distance between jam nut and end of door locking pin (bullet). This information will be needed during bullet installation in Step 6.
5. Loosen jam nut with a 1/2 inch wrench, remove door latch pin and jam nut.
6. Coat latch pin threads with NEVER-SEEZ high temperature (1800 degree F) anti-seize and lubricating compound. Install door latch pin and jam nut directly across steamer cavity from old bullet location. Install these two items so that jam nut-to-end of bullet distance is approximately the same as measured in Step 4.
7. Remove the two 1/4-20 truss head screws from above and below the old bullet location and install them above and below the new bullet location.
8. Remove screws and U-channel from the door. Take magnet and block assembly from present location and place it at the opposite end of the door channel, with magnet facing outward from the door.
9. Remove screws. Remove door handle from cam.
10. Apply NEVER-SEEZ high temperature (1800 degrees F) anti-seize and lubricating compound to the cam and Locktite 242 to screw threads.
11. Turn handle and cam 180 degrees from their original positions and install them on the door with screws. Be sure handle and cam move smoothly.
12. Be sure door handle is in the DOWN position. Turn U-channel 180 degrees from its original position, hold door spring in U-channel open with a screwdriver or similar tool, and install U-channel.
13. Check operation of the cam. Push up on the door handle and check if the spring opens. If the spring does not open, cam and spring are NOT correctly aligned and problem must be corrected.
14. Apply a light amount of Locktite 242 to screws, then install screws.
15. Apply Locktite 242 to the hinge-to-steamer bolts, then install door and hinge mounting bolts. Do NOT tighten mounting bolts at this time.
16. Align door to steamer. Refer to 4.9, Alignment procedure.

NOTE: There is a door switch inside the front panel of the steamer, on each side of the cavity. It is pre-wired in parallel, so no wiring change is necessary when the door is reversed.

17. Close steamer door and operate steamer. If steamer fan does not operate, check location of door magnet and try operation again. If fan operation problem still exists, refer to the Troubleshooting Section.
18. Allow steamer to operate for approximately 5 minutes, and then check for leaks. If there are no leaks, the steamer is ready for operation. If there are leaks around the door, recheck door alignment, and if necessary, door gasket installation.

5.9 Door Switch P/N 096857

NOTE: One normally open door switch is factory-installed on each side of the steamer cavity. Activated (that is, closed) by the proximity of the door magnet, they are wired in parallel so that only one switch at a time will affect steamer operation.

1. Remove the side panel for access to the door switch that is to be replaced.
2. Unplug the door switch leads from the steamer harness.
3. The switch is held in place with two small 4-40 screws. With a slotted screwdriver, remove these screws and the switch may be removed.
4. To install the switch use the two 4-40 screws and a screwdriver with a screwstarter features.
5. Connect switch leads to steamer harness.
6. Test steamer operation.
7. Replace side panel.

5.10 Door Gasket

For Part Number, refer to section on Steamer Model

NOTE: Door Gasket not covered under terms of warranty.

Removal

1. Turn off steamer power and allow to cool.
2. Remove the door using one of the following two methods:
   a) Support door weight and remove hinge pin or
   b) Support weight of the door and remove the two door-to-hinge bolts.
3. Place the door on a flat, clean, smooth table or similar support with handle hanging over edge. Be careful not to scratch the door.
4. Remove four (or eight) 8-32 truss head screws and remove inner door panel.
5. Remove and discard door gasket.
6. Clean back of the inner door panel. Be sure old sealant is completely removed.

Installation

1. Install new door gasket around inner panel as shown in the illustration. Be sure the inner door panel flange is fully inserted into the door gasket groove.
2. Apply a high temperature silicone sealant, such as GE RTV 159 or equivalent, to the four door spacers.
3. Apply Locktite 242 to inner door panel mounting screws.
4. Install inner door panel and door gasket on the door spacers, and tighten mounting screws.
5. Align door with hinge and insert hinge pin OR apply Locktite 242 to the door-to-hinge bolts, then install door and mounting bolts. Do NOT tighten mounting bolts at this time.
6. Align door to steamer and tighten bolts.

Please refer to 4.8 for alignment procedure.

5.11 Float

Removal

1. Turn off the steamer power and disconnect the steamer from the branch circuit.
2. Remove the right side cover from the steamer.
3. Disconnect the water level probe harness wire.
4. Loosen and remove the hex locking nut and washer.
5. Remove the float probe from inside the cavity.

NOTE: Probe orientation prior to removal. Low probe rotates down and high probe rotates up.

Installation

6. Insert the new water level probe through the opening from inside the steamer cavity (be sure the soft white washer is inside the cavity for a float.
7. From the outside, put on any washer and locking nut. Tighten nut finger tight and then another 1/4 turn to prevent any water leaks.
8. Attach the harness wire.
9. Turn on the branch circuit power supply.
10. Turn ON the steamer and test.

5.12 Element

Removal

1. Turn off the steamer power and disconnect the steamer from the branch circuit.
2. Using a screwdriver, remove both left and right side panels.
3. Remove rear element access panel
4. Fold insulation out of the way.
5. Remove element insulation cover by removing the 6ea 7/16" x 32 nuts using a ratchet and 7/16" socket.
6. Remove element insulation.
7. Loosen but do not remove the element brackets using the 6 remaining 7/16" x 32 nuts using a ratchet and 7/16" socket.
8. Trace the wires of the element back to the element terminal block and remove the wires with a #2 flat blade screwdriver.
9. Slide the element out from the back of the unit through the element access area to replace.

Installation

10. Slide the new through the element bracket from the rear access panel
11. Install the element wires into the element terminal block from which the original element was installed using a #2 flat blade screwdriver.
12. Tighten the 7/16" x 32 nuts supporting the element brackets using a ratchet and 7/16" socket.
13. Replace element insulation.
14. Replace element insulation cover and secure using a ratchet and the remaining 7/16" x 32 nuts.
15. Replace and secure rear element access panel using a #2 flat blade screwdriver and the 5-10/32" screws.
16. Recheck all wire connections and screws.
17. Using a screwdriver, replace both left and right side panels.
18. Reconnect power supply.

5.13 Burner

Removal

1. Disconnect power and gas supplied to the unit.
2. Remove the left side panel by removing the three exterior screws.
3. Remove the side access plate by removing the two 10x32 nuts.
4. Unplug the HSI and flame sensor.
5. Remove the 5-1/4" screws on the holding plate near the ignition tube and the two on the bottom of the holding plate.
6. Loosen the 3/4" compression fitting on the ignition tube and move it toward the base.
7. Slide the burner out the left side of the unit.

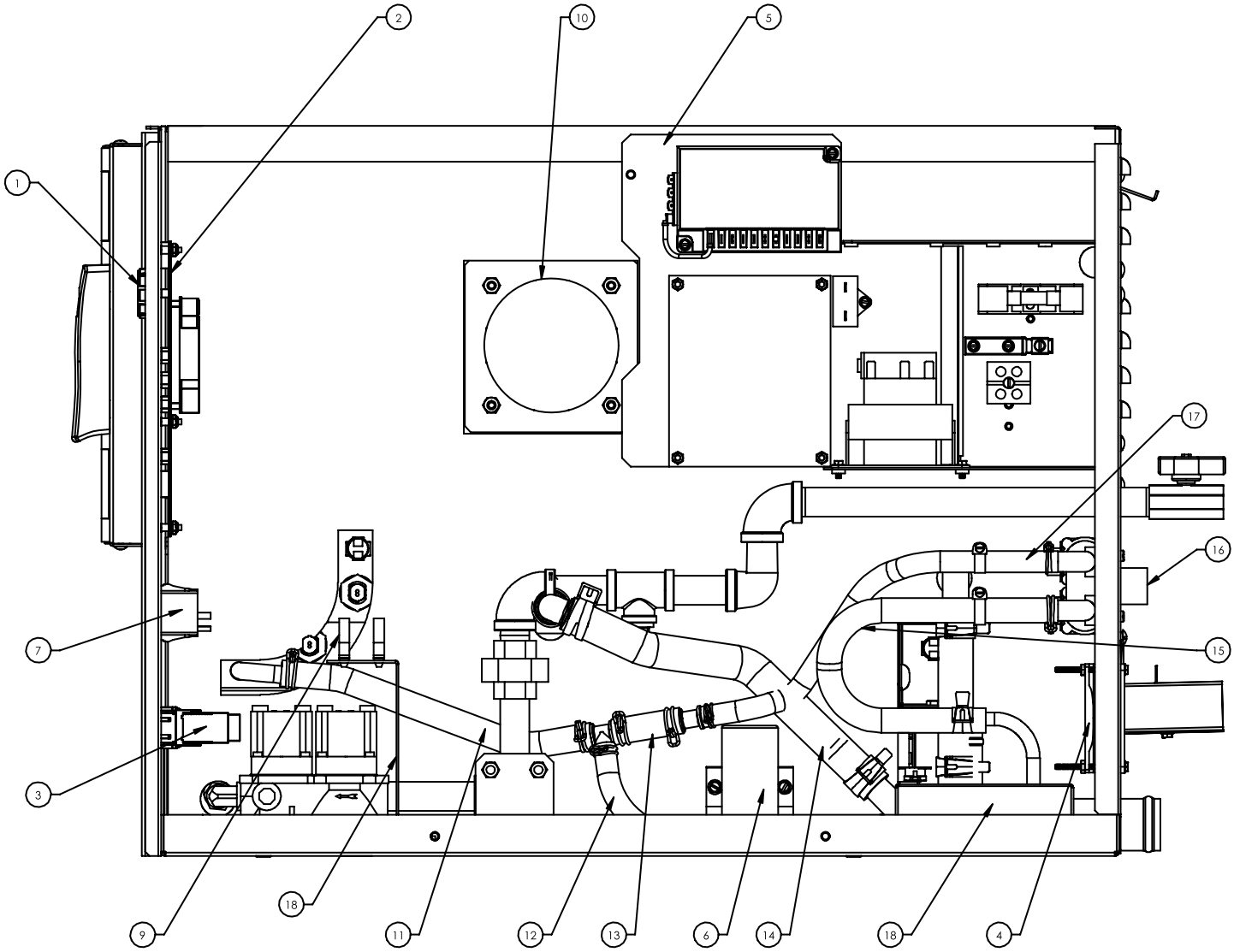
Installation

1. Slide the new burner into the left side of the unit.
2. Attach the ignition tube and tighten the 3/4" compression fitting.
3. Install the 5-1/4" screws into the holding plate.
4. Plug in the HSI and flame sensor.
5. Turn on gas supply and power to the unit.
6. **NOTE:** The ignition tube does not receive gas until the burners are active
7. Install the side access plate with the 2 10x32 nuts.
8. Re-install the left side panel with the three exterior screws.

Notes

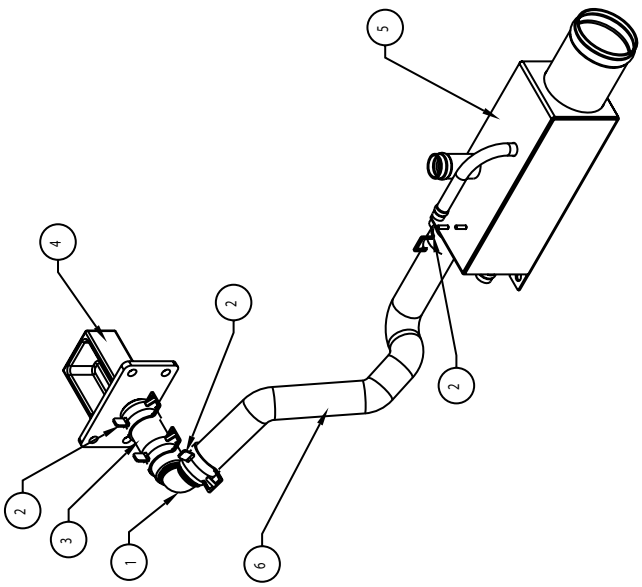
6.1 Gas Cavity Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	160921	KNOB 1.5 DIAMETER	1
2	160648	CONTROL BOARD, STEAMER	1
3	149295	HOUR METER, REDINGTON, SSB	1
4	153505	FAN, 24VDC MUFFIN 80MM	1
5	160490	STEAMER HIGH VOLTAGE PANEL ASSY SSB-G	1
6	071234	VALVE-DRAIN 1/2" ID	1
7	160920	ROCKER SWITCH FOR LATCHING RELAYS	1
8	160721	CABLE BRACKET	1
9	160867	NATURAL WIRE STANDOFFS	2
10	146880	MOTOR ASM, STEAMER BLOWER	1
11	143974	HOSE, 1/2" ID DRAIN, SSB-3/5	1
12	140172	HOSE, DRAIN	1
13	143975	HOSE, SHORT 1/2" ID, FILL	1
14	150672	HOSE, CONDENSATE DRAIN SSB	1
15	140169	HOSE, DRAIN COOLING	1
16	071235	VALVE-WATER FEED 3/4 R	1
17	140170	HOSE, 3/8" ID, WATER FILL	1
18	150659	WELDMENT, DRAIN MANIFOLD ASSY, SSB-3/5E&G	1

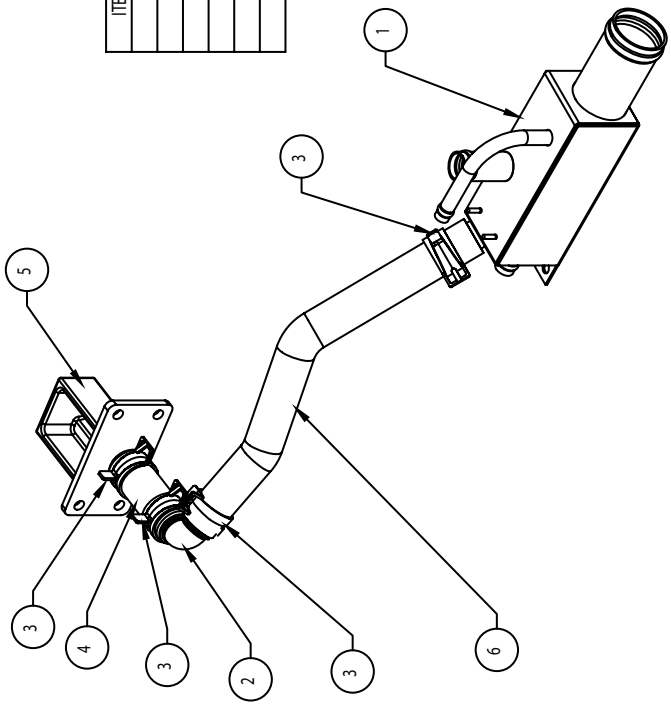


6.2 Gas Overflow & Condensate Dain

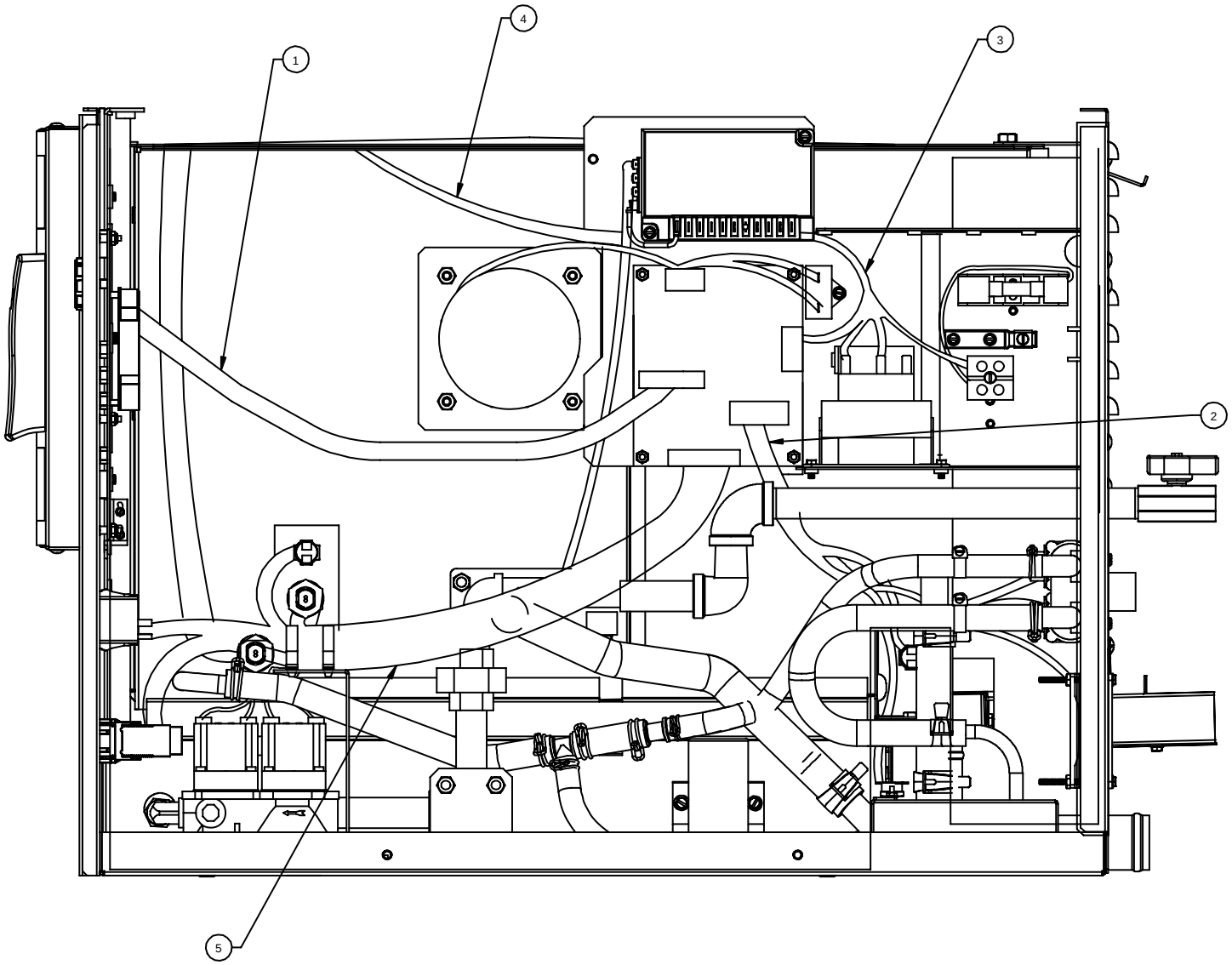
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	142549	ELBOW 3/4" HOSE BARB	1
2	138457	CLAMP,CONSTANT TENSION CTB-27	4
3	150662	HOSE, CONDENSATE DRIP	1
4	150628	DRAIN, CONDENSATE	1
5	150661	WELDMENT, DRAIN MANIFOLD ASSY	1
6	150672	HOSE, CONDENSATE DRAIN SSB	1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	150659	WELDMENT, DRAIN MANIFOLD ASSY, SSB-3/5E&G	1
2	142549	ELBOW 3/4" HOSE BARB	4
3	138457	CLAMP,CONSTANT TENSION CTB-27	1
4	150662	HOSE, CONDENSATE DRIP	1
5	150628	DRAIN, CONDENSATE	1
6	150672	HOSE, CONDENSATE DRAIN SSB	1

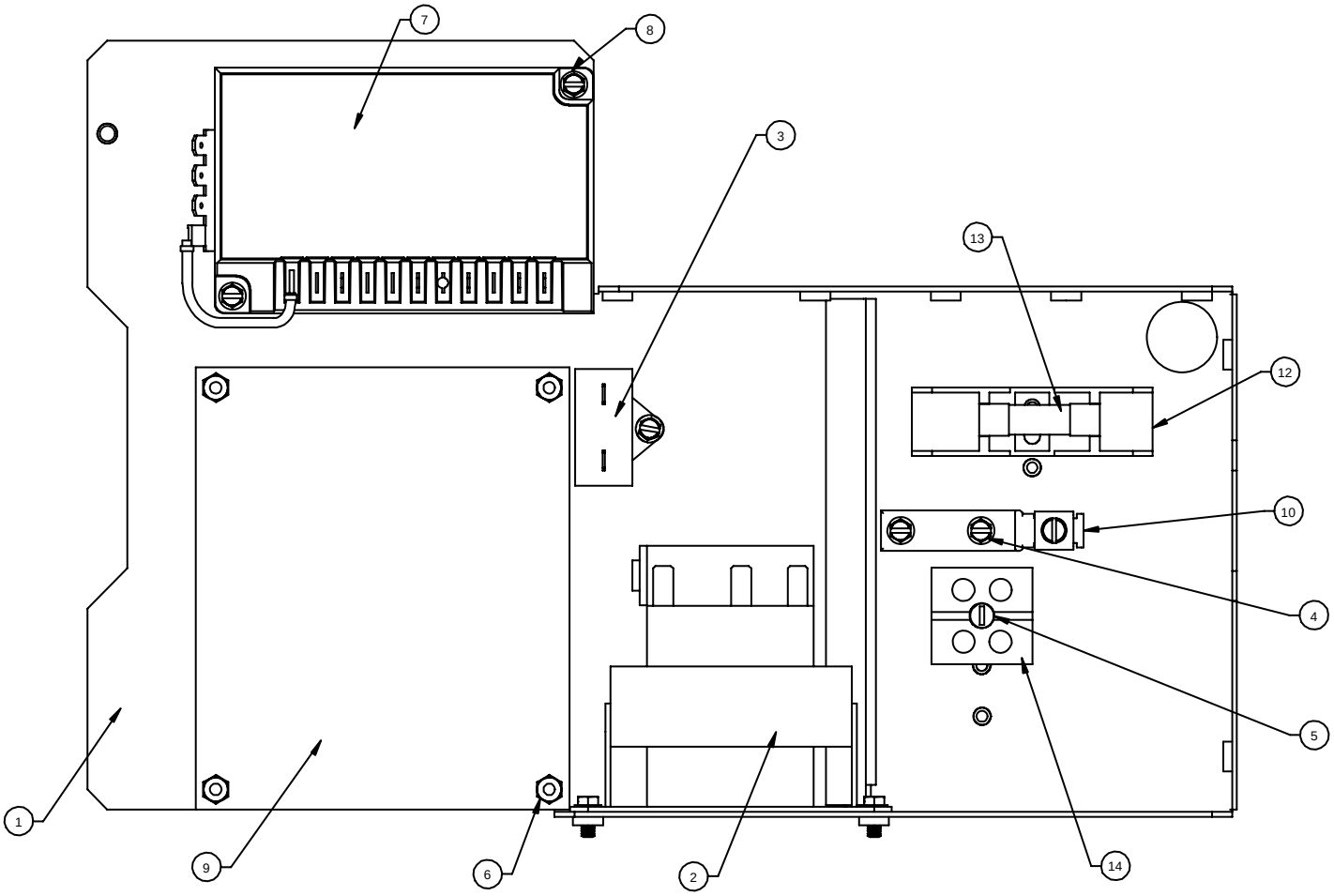


6.3 Gas Harnesses

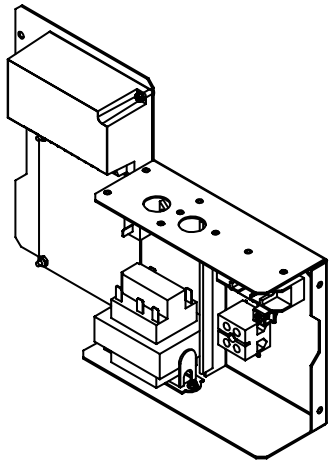


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	160885	HARNESS, SSB-G CONTROL TO RELAY BOARD	1
2	160883	HARNESS, SSB REAR	1
3	160881	HARNESS, SSB-G LOW VOLTAGE	1
4	153339	HARNESS, SSB-G IGNITION	1
5	153338	HARNESS, SSB-G FORWARD	1
6	153118	HARNESS, STEAMER 480-VOLT (NOT SHOWN)	1

6.4 Gas High Voltage Assembly



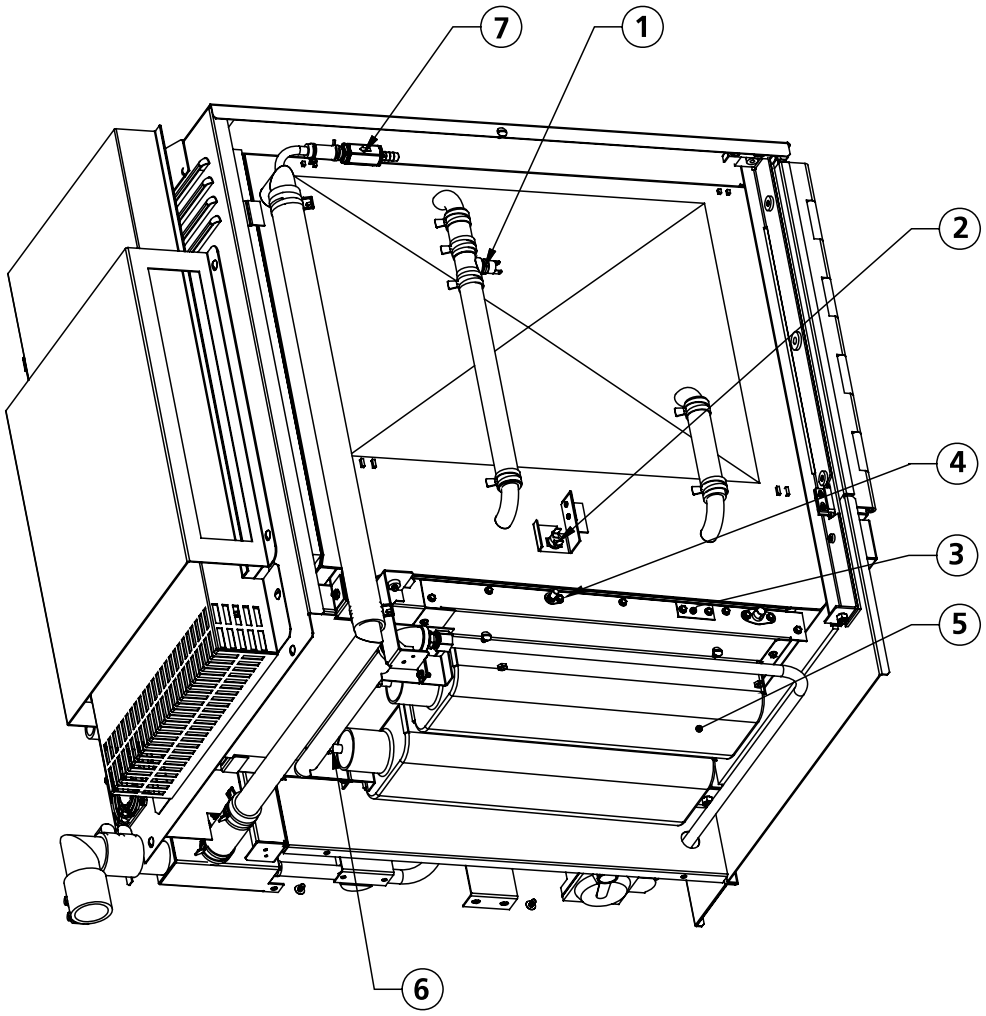
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	160488	HIGH VOLTAGE PANEL	1
2	121716	TRANSFORMER, 75VAC	1
3	096812	CAPACITOR FOIL 6 MFD	1
4	069789	SCREW HEX SLOTTED WASHER HEAD CAP	5
5	005056	SCREW ROUND HEAD 8-32 1 1/4"	1
6	119855	NUT, 6-32 LOCK INSERT	4
7	140184	MODULE, IGNITION, HSI	1
8	069790	SCREW HEX SLOTTED	2
9	160649	RELAYBOARD, STEAMER	1
10	106412	MECHANICAL LUG,GROUND, #2 - #8	1
11	160874	HARNESS, STEAMER HIGH VOLTAGE	1
12	077840	FUSEBLOCK 1 POLE	1
13	002651	FUSE 3 AMP BUSS #BAF-3	1
14	003887	TERMINAL BLOCK 2-POLE	1



6.5 Burner Assembly

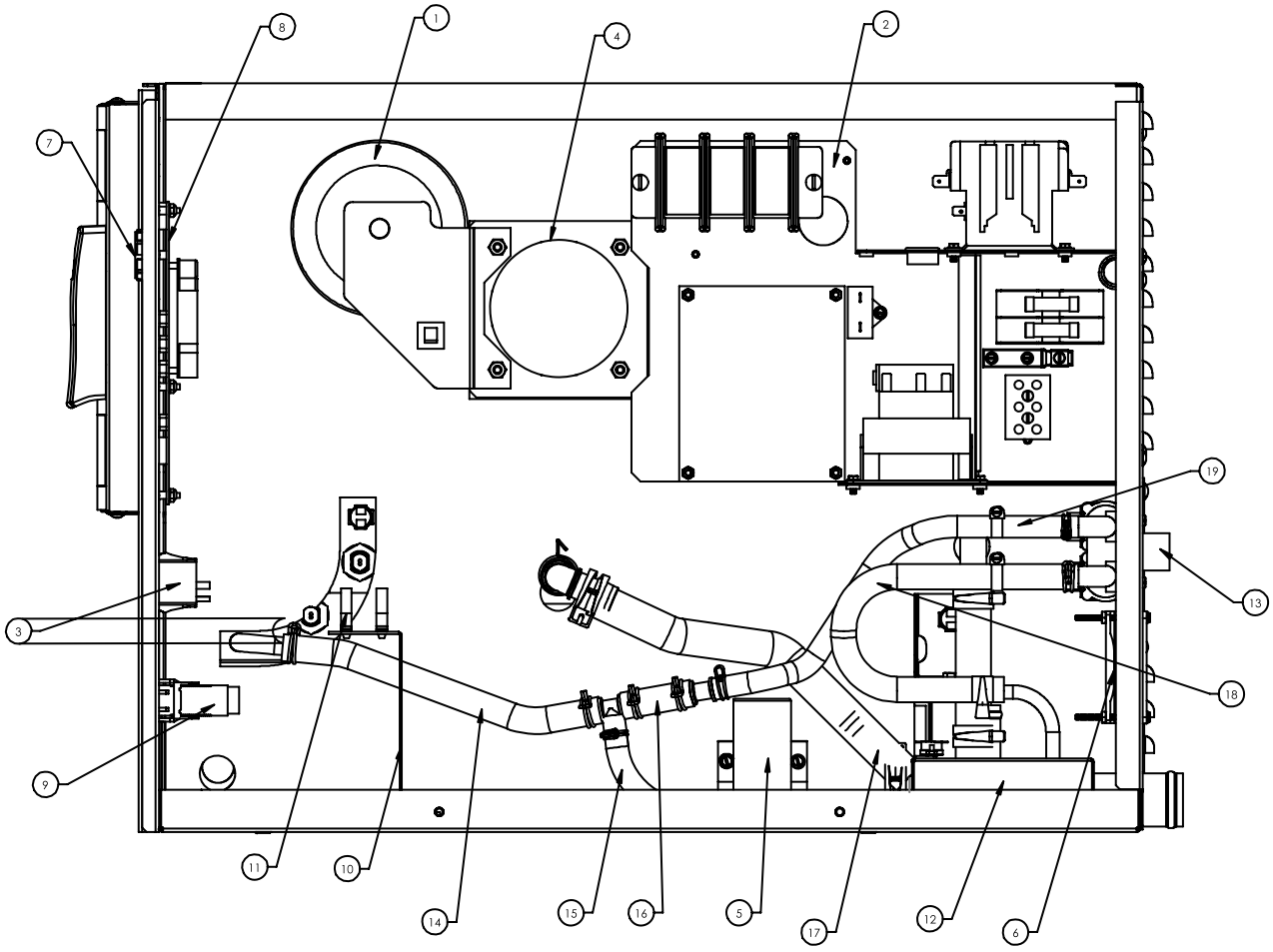
No.	Description	Part No.	Model
1	Ready T-stat	088865	All
2	Hi-limit	144484	All
3	Hot Surface Ignitor (H.S.I.)	143559	5G & 3G
4	Flame Sensor	143673	All
5	Infrared (IR) Burner Assembly	143976	5G & 3G
5	Infrared (IR) Burner Assembly	145074	10G
6	Orifice, Natural Gas	**	**
6	Orifice, Propane Gas	**	**
7	Check Valve	138428	All

** See chart at end of section 4.3

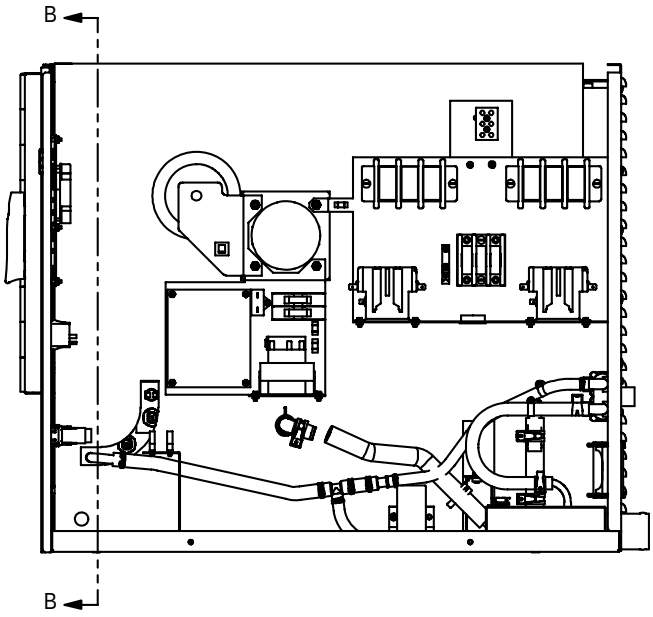


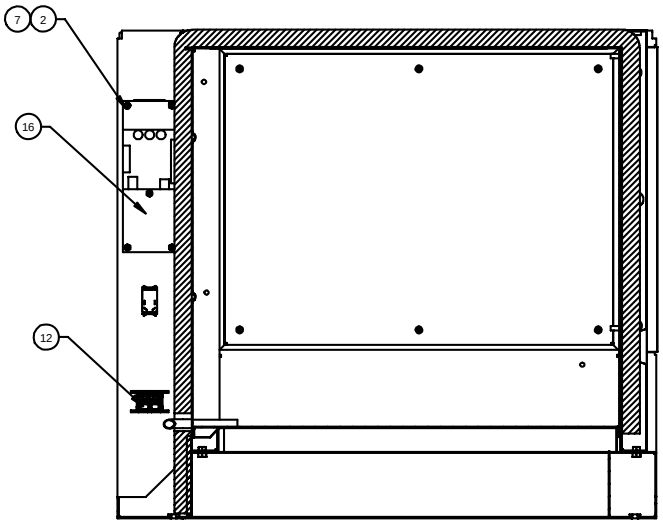
6.6 Electric Cavity Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	160489	STEAMER HIGH VOLTAGE PANEL ASSY SSB-E	1
2	160920	ROCKER SWITCH FOR LATCHING RELAYS	1
3	146880	MOTOR ASM, STEAMER BLOWER	1
4	071234	VALVE-DRAIN 1/2" ID	1
5	153505	FAN, 24VDC MUFFIN 80MM	1
6	160921	KNOB 1.5 DIAMETER	1
7	160648	CONTROL BOARD, STEAMER	1
8	149295	HOUR METER, REDINGTON, SSB	1
9	160721	CABLE BRACKET	1
10	160867	NATURAL WIRE STANDOFFS	2
11	150659	WELDMENT, DRAIN MANIFOLD ASSY, SSB-3/5E&G	1
14	119833	TOROID ASM(480 VOLT ONLY)	1
13	071235	VALVE-WATER FEED 3/4 R	1
14	143974	HOSE, 1/2" ID DRAIN, SSB-3/5	1
15	140172	HOSE, DRAIN	1
16	143975	HOSE, SHORT 1/2" ID, FILL	1
17	150672	HOSE, CONDENSATE DRAIN SSB	1
18	140169	HOSE, DRAIN COOLING	1
19	140170	HOSE, 3/8" ID, WATER FILL	1



6.6 Steamer Low Voltage Panel Assembly SSB-10E



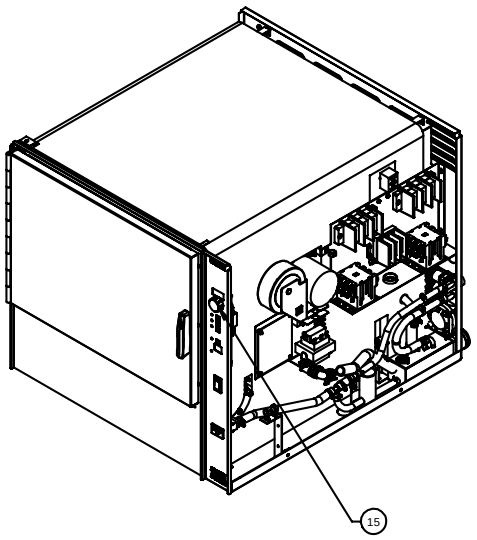


SECTION B-B
SCALE 1 : 4

ITEM NO.	QTY.	PART NO.	DESCRIPTION
2	5	119855	NUT, 6-32 LOCK INSERT
7	5	126026	WASHER, #6 NYLON
12	1	149295	HOUR METER, REDINGTON, SSB
13	0.02	149466	COMPOUND, RUBBER COATING
15	1	160921	KNOB, 1.5 DIA
16	1	160648	CONTROL BOARD, STEAMER

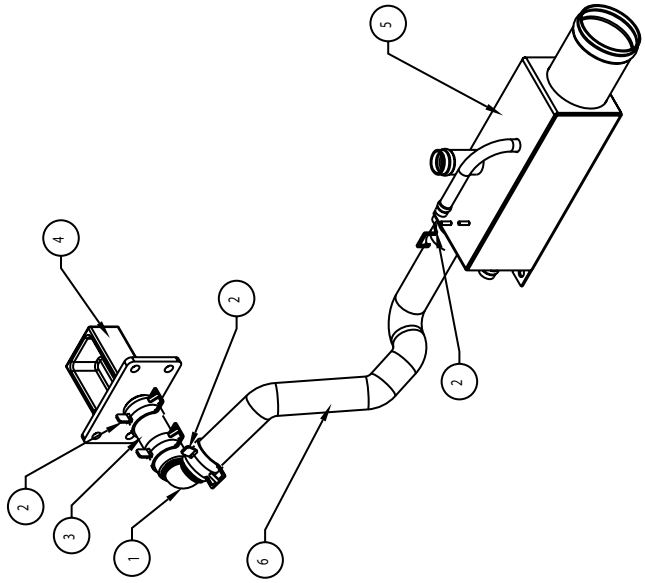
NOTES:

1. APPLY ITEM #13, RUBBER COATING COMPOUND, TO BOTH ELECTRICAL CONNECTION SCREWS AFTER HARNESS IS SECURED.

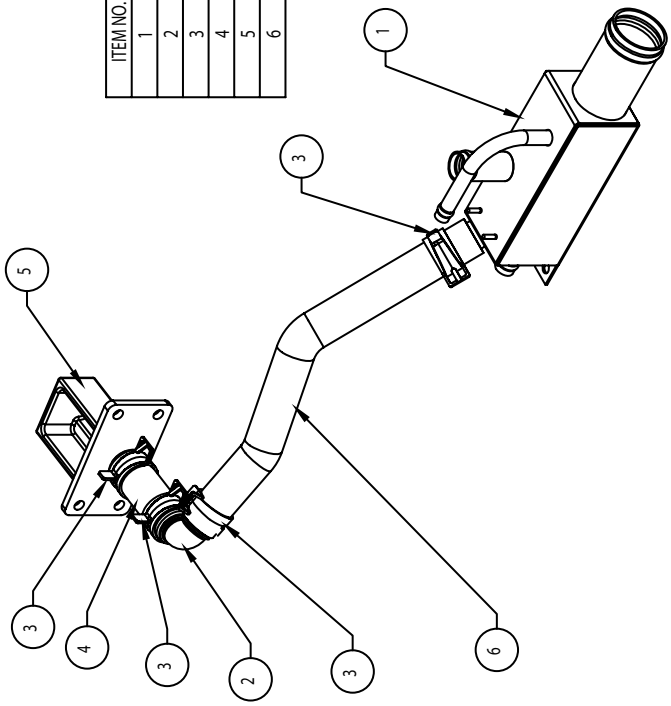


6.7 Electric Overflow & Condensate Drain

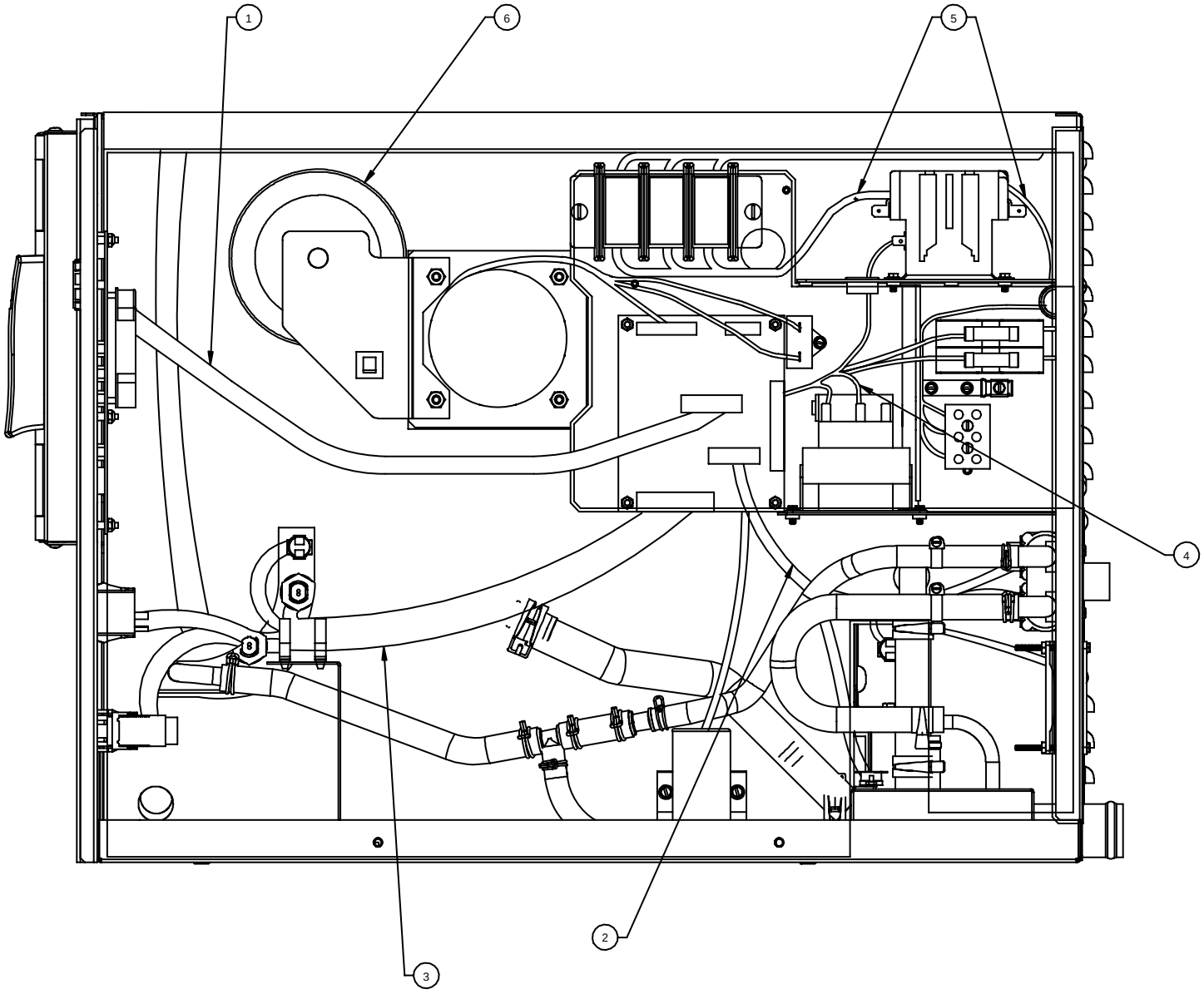
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	142549	ELBOW 3/4" HOSE BARB	1
2	138457	CLAMP, CONSTANT TENSION CTB-27	4
3	150662	HOSE, CONDENSATE DRIP	1
4	150628	DRAIN, CONDENSATE	1
5	150661	WELDMENT, DRAIN MANIFOLD ASSY	1
6	150672	HOSE, CONDENSATE DRAIN SSB	1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	150659	WELDMENT, DRAIN MANIFOLD ASSY, SSB-3/5E&G	1
2	142549	ELBOW 3/4" HOSE BARB	4
3	138457	CLAMP, CONSTANT TENSION CTB-27	1
4	150662	HOSE, CONDENSATE DRIP	1
5	150628	DRAIN, CONDENSATE	1
6	150672	HOSE, CONDENSATE DRAIN SSB	1

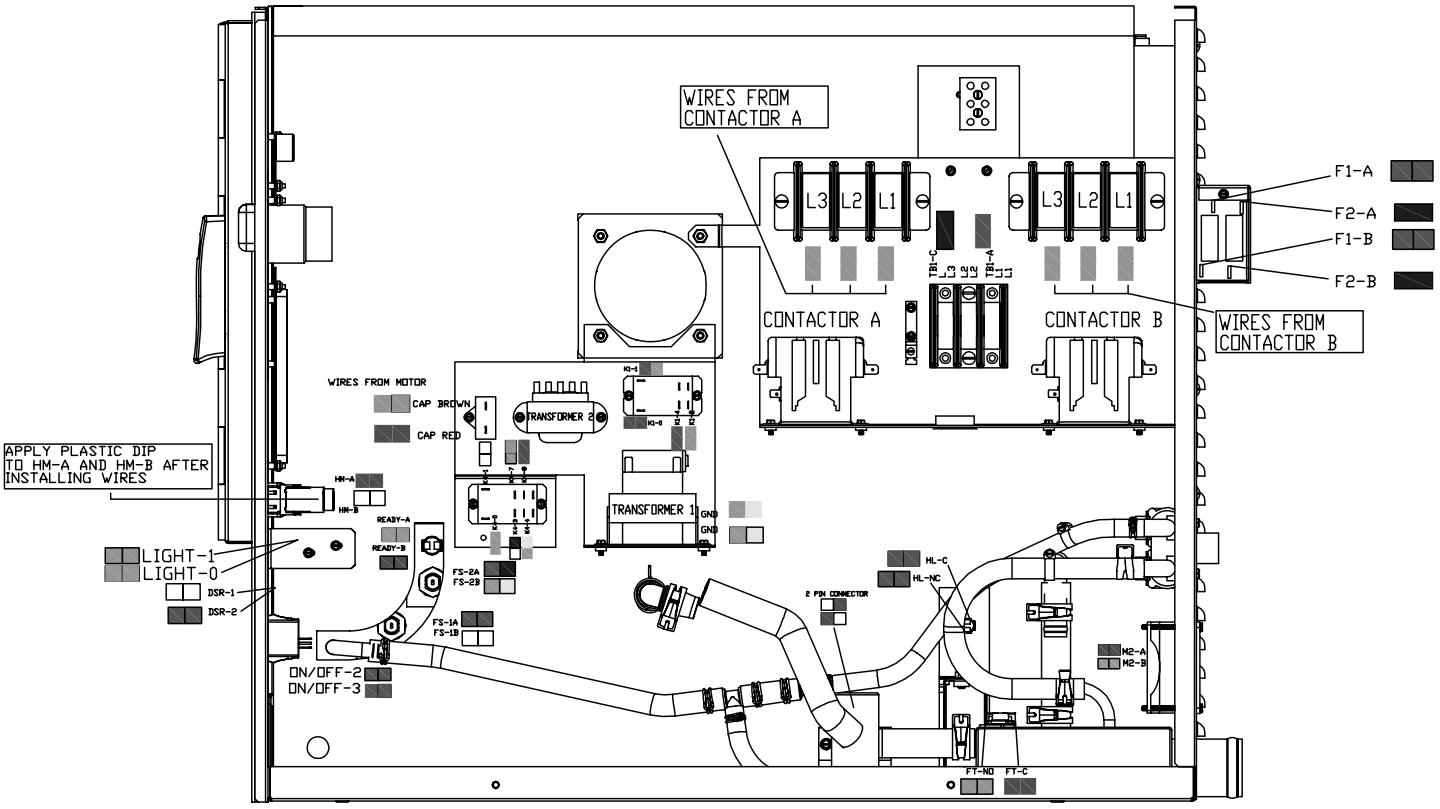


6.8 Electric Harnesses SSB-3E/5E

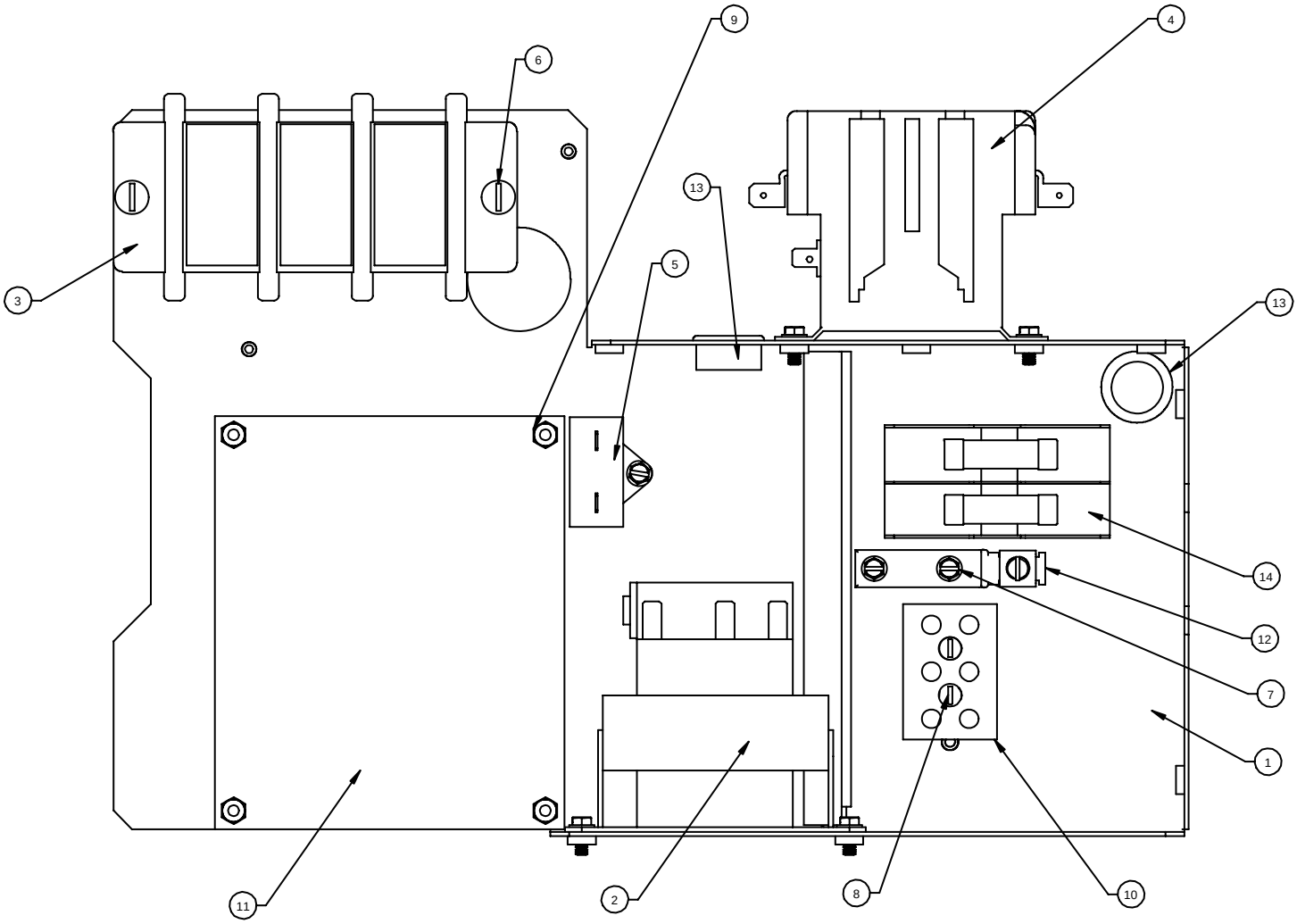


ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	160884	HARNESS, SSB-E CONTROL TO RELAY BOARD
2	1	160883	HARNESS, SSB REAR
3	1	160882	HARNESS, SSB FORWARD
4	1	160880	HARNESS, SSB-E LOW VOLTAGE
5	1	153486	HARNESS, SSB HIGH VOLTAGE
6	1	153118	HARNESS, STEAMER 480-VOLT

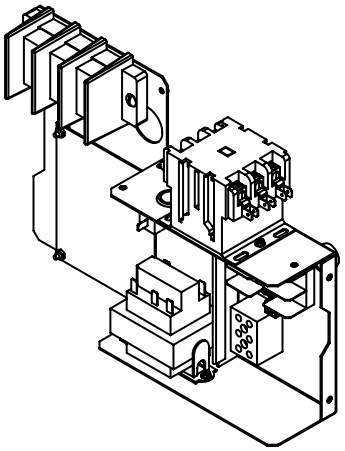
6.8 Electric Harnesses SSB-10E



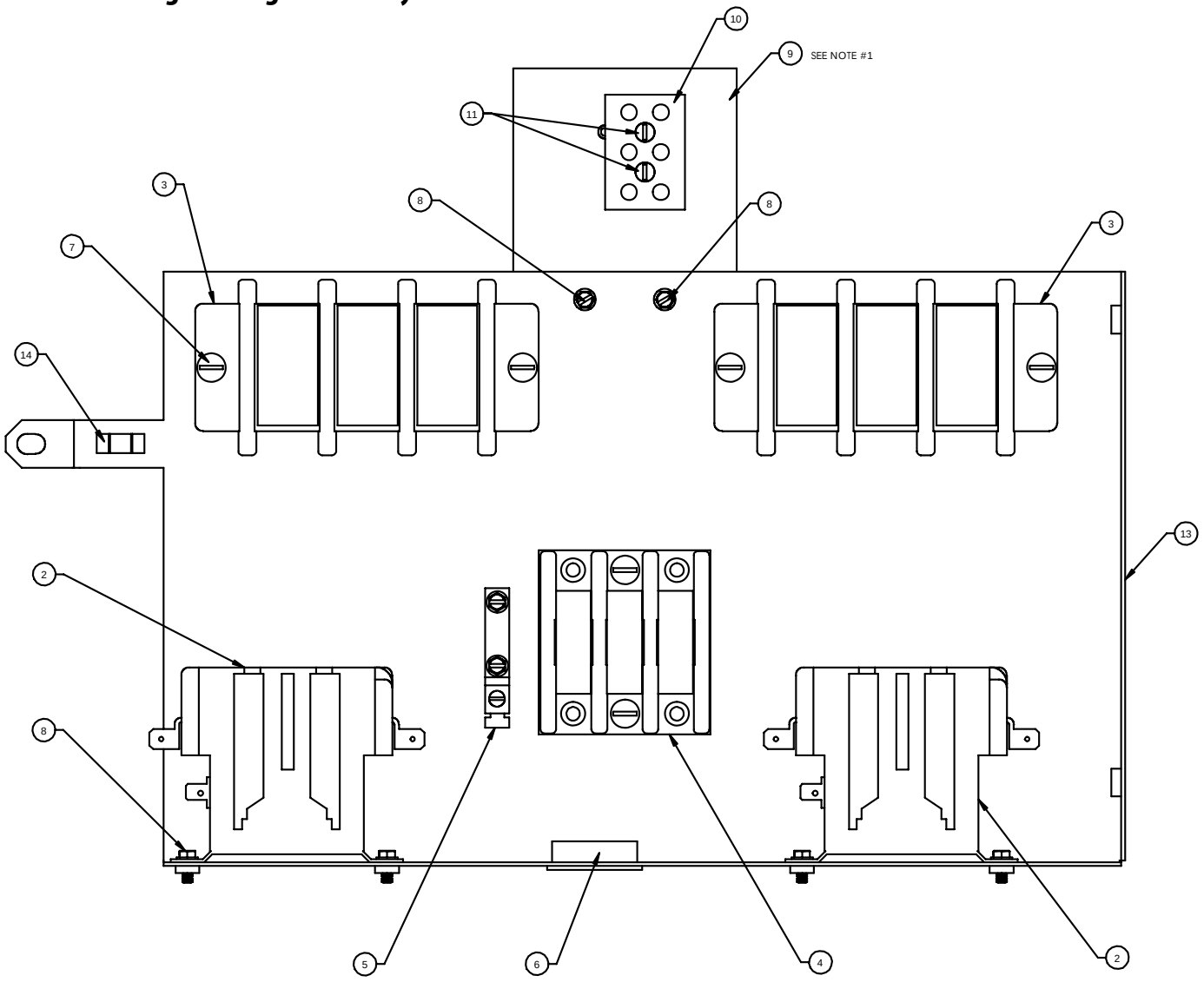
6.9 Electric High Voltage Assembly SSB-3E/5E



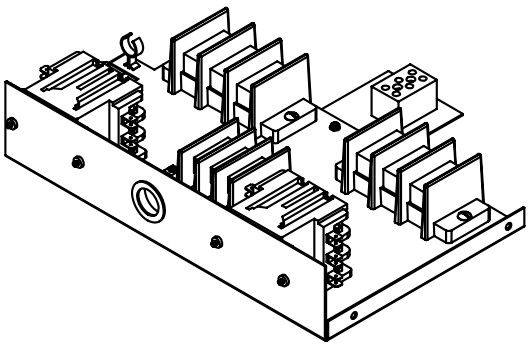
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	160488	HIGH VOLTAGE PANEL	1
2	121716	TRANSFORMER, 75VAC	1
3	070185	TERMINAL BLOCK 3 POLE	1
4	145081	CONTACTOR, 50 FLA 3P HCOIL	1
5	096813	CAPACITOR FOIL 3 MFD	1
6	116100	SCREW TRUSS HD MACHINE #10-32	2
7	069789	SCREW HEX SLOTTED WASHER HEAD CAP	7
8	005056	SCREW ROUND HEAD 8-32 1 1/4"	2
9	119855	NUT, 6-32 LOCK INSERT	4
10	003888	TERMINAL BLOCK 3-POLE	1
11	160649	RELAYBOARD, STEAMER	1
12	106412	MECHANICAL LUG,GROUND, #2 - #8	1
13	012864	BUSHING SNAP 11/16" ID	2
14	160919	FUSE BLOCK ASSY	1



6.9 Electric High Voltage Assembly SSB-10E



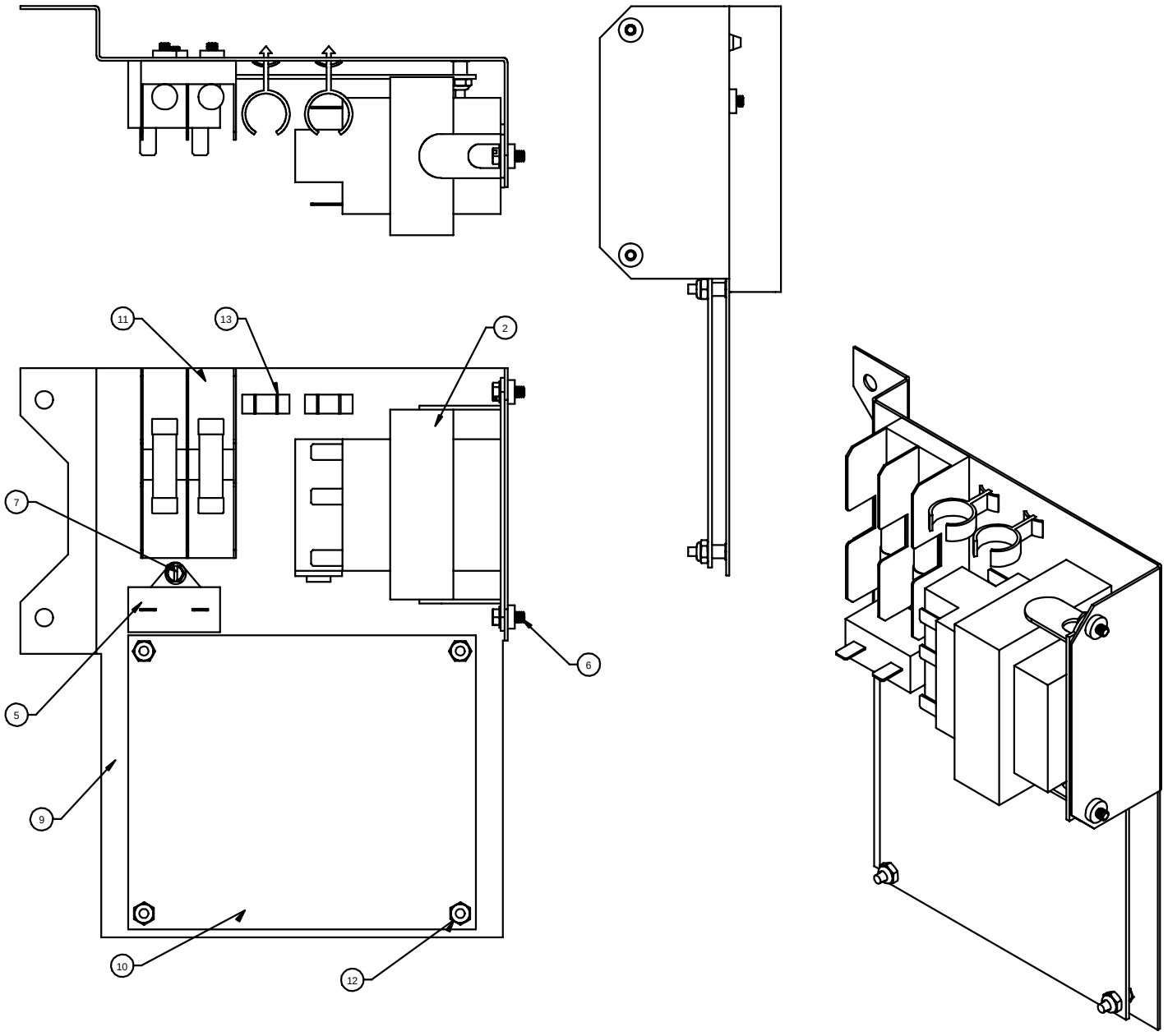
ITEM NO.	QTY.	PART NO.	DESCRIPTION
2	2	145081	CONTACTOR, 50 FLA 3P HCOIL
3	2	070185	TERMINAL BLOCK, 3 POLE
4	1	002577	TERMINAL BLOCK POWER
5	1	129714	LUG GROUND #14-#6 AWG
6	1	097015	BUSHING SNAP 1" I.D. X 1-3/8"
7	6	116100	SCREW TRUSS MACHINE #10
8	8	069789	SCREW HEX SLOTTED HD W/WASHER #8-32 X 3/8"
9	1	148440	PLATE, TERMINAL BLOCK
10	1	003888	TERMINAL BLOCK 3-POLE
11	2	005056	SCREW ROUND HEAD 8-32 1 1/4"
13	1	153700	PANEL, HIGH VOLTAGE, SSB-10E
14	1	160867	NATURAL WIRE STANDOFFS



NOTES:

1.) P/N'S (2) 005056, (2) 069789, 003888, 148440, (2) 007388RED, TO BE ADDED FOR 277V ONLY.

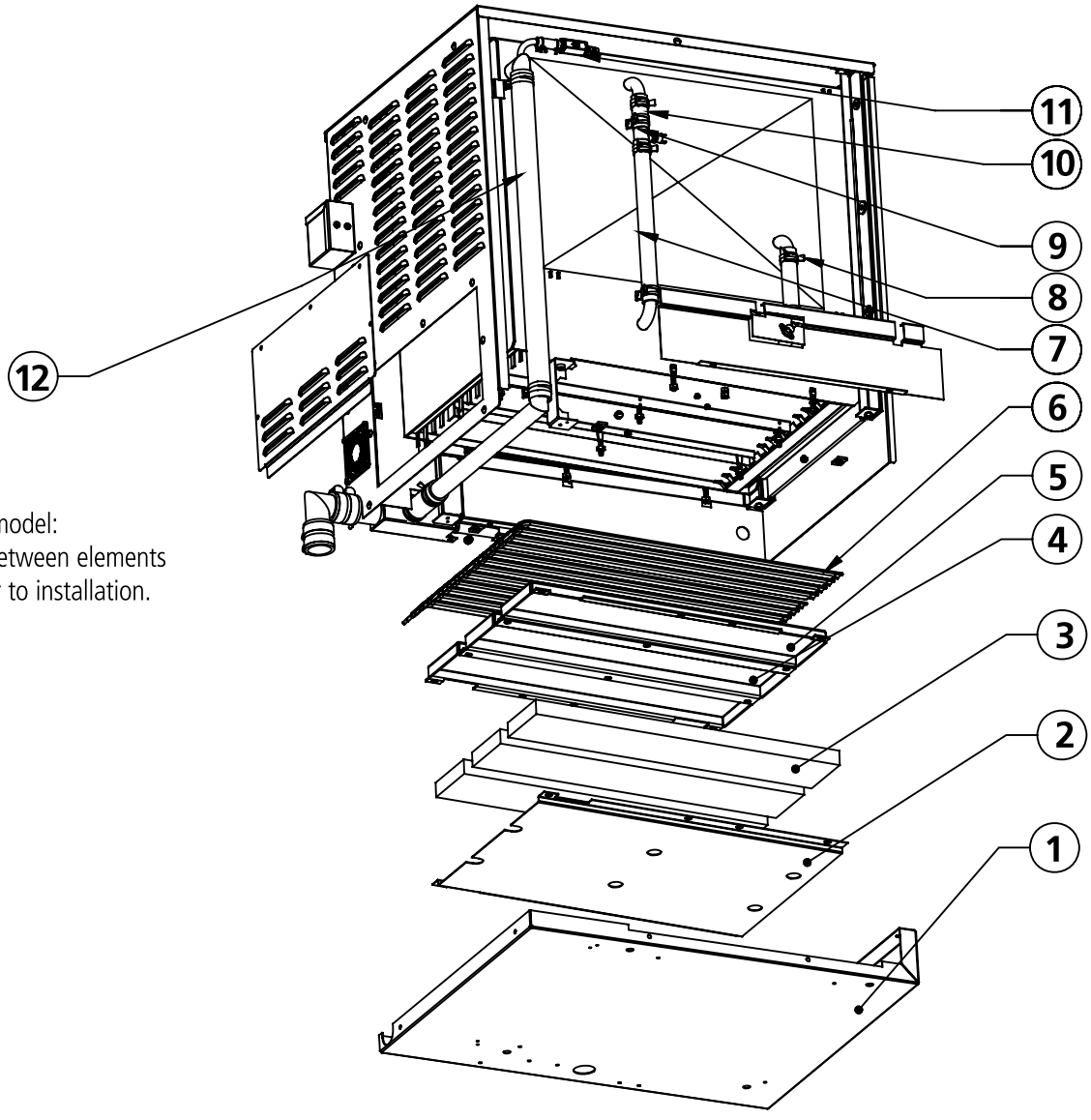
6.9 Electric Low Voltage Assembly SSB-10E



ITEM NO.	QTY.	PART NO.	DESCRIPTION
2	1	121716	TRANSFORMER, 75VAC
5	1	096813	CAPACITOR FOIL 3 MFD
6	2	069789	SCREW HEX SLOTTED HD W/WASHER #8-32 X 3/8"
7	1	069788	SCREW HEX SLOTTED WASHER HEAD CAP 6-32
9	1	153698	PANEL, LOW VOLTAGE, SSB-10E
10	1	160649	RELAYBOARD, STEAMER
11	1	160919	FUSE BLOCK ASSY
12	4	119855	NUT, 6-32 LOCK INSERT
13	2	160867	NATURAL WIRE STANDOFFS

6.10 Element Breakdown (Exploded View)

No.	Description	Part No.
1	Base, SSB 5 Pan	142802
2	Element Plate	141538
3	Element Insulation	140178
4	Center Element Support Bracket	141536
5	End Support Bracket	141537
6	Element(s) 208V	148553
6	Element(s) 240V	148554
6	Element(s) 480V (w/277V WYE Config)	148552
6	Element(s) 480V 1100W	143990



* Item 13 not shown in model:
Item 13 to be placed between elements and cavity bottom prior to installation.

Notes

Notes

Notes

AVOID DISPUTED SERVICE CALLS:

Remind Customers that SmartSteam100 Requires Daily Probe Wipe Down

Models Affected: All SmartSteam100 Boilerless Steamer Models

SmartSteam100 never needs deliming and only requires minimal maintenance to deliver high performance. Our mutual customers are so delighted with not having to delime, they are overlooking the need for the daily cleaning regimen with wipe down of the water level probes.

If customers don't do this for a while, after a few days to a few weeks, the:

1. Unit may overfill with water

When you receive a call to service a SmartSteam100 unit with the symptom above, suggest to the customer that they perform the daily wipe down, with an emphasis on wiping the probes clean. In most cases, the malfunction will go away entirely.

Explain to them that if you come and find the problem is dirty probes, you must charge them for the service call, since a daily cleaning regimen with wipe down of the water level probes is a customer responsibility and is not covered under warranty.

GROEN®

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888-994-7636 • 601-372-3903 • Fax 888-864-7636
groen.com

PART NUMBER 147423, REV. F (10/07)